

SEQUENCE LISTING

<110> Allen, Steve
Helentjaris, Tim
Hitz, Bill
Kinney, Tony
Tingey, Scott

<120> Plant Sugar Transport Proteins

<130> BB1163 US CIP

<140>
<141>

<150> 60/083,044
<151> April 24, 1998

<160> 38

<170> Microsoft Office 97

<210> 1
<211> 2824
<212> DNA
<213> Zea mays

<220>
<221> unsure
<222> (29)

<220>
<221> unsure
<222> (622)

<220>
<221> unsure
<222> (636)

<220>
<221> unsure
<222> (638)

<220>
<221> unsure
<222> (669)

<220>
<221> unsure
<222> (771)

<220>
<221> unsure
<222> (822)

<220>
<221> unsure
<222> (856)

<220>
<221> unsure
<222> (889)

<220>
<221> unsure
<222> (896)

<220>
<221> unsure
<222> (944)

<400> 1
cccaccccc tccactccac taccacgng gcacggcctg cctctgcagc tctgccctgc 60
tccgcacccc tcgctctcca accccaacgc gcggcggttg taaaattcac ctcagcgct 120
actccagttt ggccacctca ccaccgcgc cgcgtgttta agaaggcccc gcgcccgatc 180
ggggatcacg aaccttgccc gccgctgccg gagggggggc gtagatttcc ggcgcccatg 240
ggggggcgcc tgatggtcgc catcgcgccc tctatcgga acttgctgca gggctgggac 300
aatgcgacaa ttgctggagc cgtcctgtac ataaagaagg aattcaacct gcagagcgag 360
cctctgatcg aaggcctcat cgtcgccatg ttctcattg gggcaacagt catcacaaca 420
tctccggggc caagggctga ctgcgttgtt aggaggccca tgctggctgc ctgggctgtc 480
ctctacttcg tcagtgggct ggtgatgctt tgggcgcca ttgtgtacat cttgctcttc 540
gcaaggctca ttgatgggtt cggatcgggt ttggcggtca cacttgttcc tctctacatc 600
tccgaaactg caccgcacag anattcttg ggctgntnga acacgttgcc gcagttcatt 660
ggggtcagng gagggatgtt cctctcctac tgcattggtt ttgggatgtc cctcatgccc 720
aaacctgatt ggaggctcat gcttgaggt ctgtcgatcc cgtcacttat ntactttgga 780
ctgactgtct tctacttgcc tgaatcacca aggtggcttg tnagcaaagg aaggatggcg 840
gaggcgaaga gagtgtgca aaggctgcgg ggaagagaag atgtctcang ggagangct 900
cttctagttg aaggtttggg ggtcggtaaa gatacacgta ttnagagta catcattgga 960
cctgccaccg aggcagccga tgatcttgta actgacgggtg ataaggaaca aatcacactt 1020
tatgggcctg aagaaggcca gtcattgatt gctcgacctt ctaagggacc catcatgctt 1080
ggaagtgtgc tttctcttgc atctcgtcat gggagcatgg tgaaccagag tgtaccctt 1140
atggatccga ttgtgacact ttttggtagt gtccatgaga atatgcctca agctggagga 1200
agtatgagga gcacattgtt tccaaacttt ggaagtatgt tcagtgtcac agatcagcat 1260
gccaaaaatg agcagtggga tgaggacaat cccatagcc cattgctgtc caggcaggca 1380
gatggtgcag gaggtgacta cttgtgtcac catggtcac gtggaagtgc tttgagcatg 1440
acaggtgcgg aaggggaagg cctctctagg ggaggtgga gatggtgtga gcagcactga tatcggtggg 1500
agaaggcaaa gcctcttagg atggtcagag aaggaagggt agaattgtag aaaggaagg 1560
ggatggcagc ttgcttgga gacccaagag ggagttcctg gctcaagaag gggctcaatt 1620
ggtttcaaaa gagtctactt cgatgttctt gagggtagtg agtttgtaca tgctgctgct 1680
gtttcacttc ccggtgggtg tttctcaaag ggtcttgctg aaccacgcat gtcagatgct 1740
ttagtaagtc agtcagcact tttctcaaag aaaggttcac gttggaaaga tttgtttgaa 1800
gccatggttc acccatctga gttagctgcc gttggaattc agatccttca acagtttgct 1860
cctggagtga ggcgtgccct ctatacccca caaattcttg agcaagctgg tgtggcagtt 1920
ggaataaacg gtgttctgta cagctcgcca tcagcatcca tcttgatcag ttctctcact 1980
attctttcca aatttggtct cattggcttt gccatgctgc ttatggatct ttccggaaga 2040
accttactaa tgcttcttg aattccaatc ttgatagcat ctctagttat cctggttgtg 2100
aggtttttgc tgctaggcac tacactagcc catgctttgc tctccaccat cagtgttatc 2160
tccaatctaa ttgatttggg tatgggattt ggtcccatcc ccaacatttt atgtgcagag 2220
gtctacttct ccagggttcg tggcctctgt attgccattt gtgcctttac attctggatc 2280
atctttccaa tcgtcaccta cagccttctg gtgatgtcga atgctattgg actggcggtg 2340
gtagatatca tatatgcagt cgtatgcttg atttcccttg tgttcgtctt ccttaaggtc 2400
gttttcagca aggggatgcc ccttgagggt attaccgaat tctttgcagt tgggtcggaag 2460
cctgagacaa caaagccta atttcttttg tacctttgtg tgcaactatt gcactgtaag 2520
caagcggctg gaaggggtt caccaagaag ctcgagaaat tactttggat ttgtgtaaat 2580
ttagaaactt cgaacatctg ctcatgctcc tcaaacggta aaaaagagtc cctcaatggc 2640
gttaagggaa aaataggagt cgttaagttg tcaatgtcat ttaccatag ttttacctat ttgtactgta 2700
ttataagtca agctattcaa cgctggttgt tgctagaaat ctttagaaca aagatgataa 2760

tgatctgatac tgatgttata atattcaaat ctcaaataaa gaaaatatcg tttctcaaaa 2820
 aaaa 2824

<210> 2
 <211> 747
 <212> PRT
 <213> Zea mays

<220>
 <221> UNSURE
 <222> (129)

<220>
 <221> UNSURE
 <222> (133)..(134)

<220>
 <221> UNSURE
 <222> (144)

<220>
 <221> UNSURE
 <222> (178)

<220>
 <221> UNSURE
 <222> (207)

<220>
 <221> UNSURE
 <222> (218)

<220>
 <221> UNSURE
 <222> (220)

<220>
 <221> UNSURE
 <222> (236)

<400> 2
 Met Gly Gly Ala Val Met Val Ala Ile Ala Ala Ser Ile Gly Asn Leu
 1 5 10 15
 Leu Gln Gly Trp Asp Asn Ala Thr Ile Ala Gly Ala Val Leu Tyr Ile
 20 25 30
 Lys Lys Glu Phe Asn Leu Gln Ser Glu Pro Leu Ile Glu Gly Leu Ile
 35 40 45
 Val Ala Met Phe Leu Ile Gly Ala Thr Val Ile Thr Thr Ser Pro Gly
 50 55 60
 Pro Arg Ala Asp Cys Val Gly Arg Arg Pro Met Leu Val Ala Ser Ala
 65 70 75 80
 Val Leu Tyr Phe Val Ser Gly Leu Val Met Leu Trp Ala Pro Ile Val
 85 90 95

Tyr Ile Leu Leu Leu Ala Arg Leu Ile Asp Gly Phe Gly Ile Gly Leu
 100 105 110
 Ala Val Thr Leu Val Pro Leu Tyr Ile Ser Glu Thr Ala Pro His Arg
 115 120 125
 Xaa Ser Trp Gly Xaa Xaa Asn Thr Leu Pro Gln Phe Ile Gly Val Xaa
 130 135 140
 Gly Gly Met Phe Leu Ser Tyr Cys Met Val Phe Gly Met Ser Leu Met
 145 150 155 160
 Pro Lys Pro Asp Trp Arg Leu Met Leu Gly Val Leu Ser Ile Pro Ser
 165 170 175
 Leu Xaa Tyr Phe Gly Leu Thr Val Phe Tyr Leu Pro Glu Ser Pro Arg
 180 185 190
 Trp Leu Val Ser Lys Gly Arg Met Ala Glu Ala Lys Arg Val Xaa Gln
 195 200 205
 Arg Leu Arg Gly Arg Glu Asp Val Ser Xaa Glu Xaa Ala Leu Leu Val
 210 215 220
 Glu Gly Leu Gly Val Gly Lys Asp Thr Arg Ile Xaa Glu Tyr Ile Ile
 225 230 235 240
 Gly Pro Ala Thr Glu Ala Ala Asp Asp Leu Val Thr Asp Gly Asp Lys
 245 250 255
 Glu Gln Ile Thr Leu Tyr Gly Pro Glu Glu Gly Gln Ser Trp Ile Ala
 260 265 270
 Arg Pro Ser Lys Gly Pro Ile Met Leu Gly Ser Val Leu Ser Leu Ala
 275 280 285
 Ser Arg His Gly Ser Met Val Asn Gln Ser Val Pro Leu Met Asp Pro
 290 295 300
 Ile Val Thr Leu Phe Gly Ser Val His Glu Asn Met Pro Gln Ala Gly
 305 310 315 320
 Gly Ser Met Arg Ser Thr Leu Phe Pro Asn Phe Gly Ser Met Phe Ser
 325 330 335
 Val Thr Asp Gln His Ala Lys Asn Glu Gln Trp Asp Glu Glu Asn Leu
 340 345 350
 His Arg Asp Asp Glu Glu Tyr Ala Ser Asp Gly Ala Gly Gly Asp Tyr
 355 360 365
 Glu Asp Asn Leu His Ser Pro Leu Leu Ser Arg Gln Ala Thr Gly Ala
 370 375 380
 Glu Gly Lys Asp Ile Val His His Gly His Arg Gly Ser Ala Leu Ser
 385 390 395 400
 Met Arg Arg Gln Ser Leu Leu Gly Glu Gly Gly Asp Gly Val Ser Ser
 405 410 415

Thr Asp Ile Gly Gly Gly Trp Gln Leu Ala Trp Lys Trp Ser Glu Lys
 420 425 430
 Glu Gly Glu Asn Gly Arg Lys Glu Gly Gly Phe Lys Arg Val Tyr Leu
 435 440 445
 His Gln Glu Gly Val Pro Gly Ser Arg Arg Gly Ser Ile Val Ser Leu
 450 455 460
 Pro Gly Gly Gly Asp Val Leu Glu Gly Ser Glu Phe Val His Ala Ala
 465 470 475 480
 Ala Leu Val Ser Gln Ser Ala Leu Phe Ser Lys Gly Leu Ala Glu Pro
 485 490 495
 Arg Met Ser Asp Ala Ala Met Val His Pro Ser Glu Val Ala Ala Lys
 500 505 510
 Gly Ser Arg Trp Lys Asp Leu Phe Glu Pro Gly Val Arg Arg Ala Leu
 515 520 525
 Leu Val Gly Val Gly Ile Gln Ile Leu Gln Gln Phe Ala Gly Ile Asn
 530 535 540
 Gly Val Leu Tyr Tyr Thr Pro Gln Ile Leu Glu Gln Ala Gly Val Ala
 545 550 555 560
 Val Ile Leu Ser Lys Phe Gly Leu Ser Ser Ala Ser Ala Ser Ile Leu
 565 570 575
 Ile Ser Ser Leu Thr Thr Leu Leu Met Leu Pro Cys Ile Gly Phe Ala
 580 585 590
 Met Leu Leu Met Asp Leu Ser Gly Arg Arg Phe Leu Leu Leu Gly Thr
 595 600 605
 Ile Pro Ile Leu Ile Ala Ser Leu Val Ile Leu Val Val Ser Asn Leu
 610 615 620
 Ile Asp Leu Gly Thr Leu Ala His Ala Leu Leu Ser Thr Ile Ser Val
 625 630 635 640
 Ile Val Tyr Phe Cys Cys Phe Val Met Gly Phe Gly Pro Ile Pro Asn
 645 650 655
 Ile Leu Cys Ala Glu Ile Phe Pro Thr Arg Val Arg Gly Leu Cys Ile
 660 665 670
 Ala Ile Cys Ala Phe Thr Phe Trp Ile Gly Asp Ile Ile Val Thr Tyr
 675 680 685
 Ser Leu Pro Val Met Leu Asn Ala Ile Gly Leu Ala Gly Val Phe Ser
 690 695 700
 Ile Tyr Ala Val Val Cys Leu Ile Ser Phe Val Phe Val Phe Leu Lys
 705 710 715 720
 Val Pro Glu Thr Lys Gly Met Pro Leu Glu Val Ile Thr Glu Phe Phe
 725 730 735

Ala Val Gly Ala Lys Gln Ala Ala Ala Lys Ala
740 745

<210> 3
<211> 443
<212> DNA
<213> Oryza sativa

<220>
<221> unsure
<222> (193)

<220>
<221> unsure
<222> (388)

<220>
<221> unsure
<222> (435)

<220>
<221> unsure
<222> (439)

<400> 3
gaagagctca cccccccccc ctcggccctg gactccctcc tccaaatctc ccctaaaagc 60
ttcccaattt ggcgagaatt ccccatatat ttgccccatc tgggcgtccc aacgagccct 120
tccagattcc cagccgcctc tcttcttggt aggggatccg aaatctcggt ggacgagaga 180
cttgggtggta atnattcgcc ggccatggcg ggcgcgtgc tggtcgccat cgcggcctcc 240
atcggcaact tgctgcaggg ctgggataat gcaaccattg caggtgcggt actgtacatc 300
aagaaggaat tcaacttgca tagcgacccc cttatcgaag gtctgatcgt ggccatgtcg 360
ctcattgggg ccaccatcat cagcagntc tctgcgagca ggtggctgac tcttttggtg 420
tggcggccca tgctnatcnc ttc 443

<210> 4
<211> 131
<212> PRT
<213> Oryza sativa

<220>
<221> UNSURE
<222> (65)

<220>
<221> UNSURE
<222> (130)

<400> 4
Glu Glu Leu Thr Pro Pro Pro Ser Ala Leu Asp Ser Leu Leu Gln Ile
1 5 10 15
Ser Pro Lys Ser Phe Pro Ile Trp Arg Glu Phe Pro Ile Tyr Leu Pro
20 25 30
His Leu Gly Val Pro Thr Ser Pro Ser Arg Phe Pro Ala Ala Ser Leu
35 40 45
Leu Val Arg Gly Ser Glu Ile Ser Val Asp Glu Arg Leu Gly Gly Asn
50 55 60

Xaa Ser Pro Ala Met Ala Gly Ala Val Leu Val Ala Ile Ala Ala Ser
65 70 75 80

Ile Gly Asn Leu Leu Gln Gly Trp Asp Asn Ala Thr Ile Ala Gly Ala
85 90 95

Val Leu Tyr Ile Lys Lys Glu Phe Asn Leu His Ser Asp Pro Leu Ile
100 105 110

Glu Gly Leu Ile Val Ala Met Ser Leu Ile Gly Ala Thr Ile Ile Thr
115 120 125

Thr Xaa Ser
130

<210> 5
<211> 870
<212> DNA
<213> Oryza sativa

<400> 5
gcacgaggtt ctaaccttga ttctgggtcaa tattctggat gtggggacca tggttcatgc 60
ctcactgtcc acagtcagtg tcatactcta cttctgcttc tttgtcatgg gggttcgggcc 120
tattccaaac attctctgtg cagagatttt cccgaccacc gttcgtggca tctgcatagc 180
catctgtgccc ctaacattct ggatcgggtga tatcattgtg acatacacc tccccgtgat 240
gctcaacgcc attggactcg ctggagtgtt tggaatctac gcagtgggtct gcatactggc 300
tttcctgttt gtcttcataga aggtgccgga gacaaagggc atgcctcttg aagtcacac 360
cgagttcttc tctgtcggag caaagcaggc caaggaggac tagttgctcg gatcaagtga 420
tcaatcagat tgctgggtgtt aattttgttg cttccaaatc gcgctgcggg ttaaacctgt 480
gatggatgct ttgttaaaga atcttggaag agatcaaaat gcagtgaagg taaagagatg 540
atgtggctgt acatcatgag gctgaatcct gtcgtagact ggattttgga gcttaggata 600
tgtagatcat ctgttccttt tggtttggtc attttccatt tgtgtttctt tgggaattctt 660
ctccctgtaa ctagtgggtc atcacagttg tgttactggt tttgccttac tcttgagttt 720
gttttcttct ctcggttggt agttctgaat attagcatag ccgagtacta gttctgaatt 780
ggtttctct ctgctgaaca tctttcattg atgcttggtt ttcattcaaaa aaaaaaaaaa 840
aaaactcgag ggggagcccc gtacacatct 870

<210> 6
<211> 131
<212> PRT
<213> Oryza sativa

<400> 6
Val Leu Thr Leu Ile Leu Val Asn Ile Leu Asp Val Gly Thr Met Val
1 5 10 15

His Ala Ser Leu Ser Thr Val Ser Val Ile Leu Tyr Phe Cys Phe Phe
20 25 30

Val Met Gly Phe Gly Pro Ile Pro Asn Ile Leu Cys Ala Glu Ile Phe
35 40 45

Pro Thr Thr Val Arg Gly Ile Cys Ile Ala Ile Cys Ala Leu Thr Phe
50 55 60

Trp Ile Gly Asp Ile Ile Val Thr Tyr Thr Leu Pro Val Met Leu Asn
65 70 75 80

Ala Ile Gly Leu Ala Gly Val Phe Gly Ile Tyr Ala Val Val Cys Ile
85 90 95

Leu Ala Phe Leu Phe Val Phe Met Lys Val Pro Glu Thr Lys Gly Met
 100 105 110

Pro Leu Glu Val Ile Thr Glu Phe Phe Ser Val Gly Ala Lys Gln Ala
 115 120 125

Lys Glu Asp
 130

<210> 7
 <211> 2601
 <212> DNA
 <213> Glycine max

<400> 7

gttgcttaac	ccttggtgag	tgaagtgagc	aaggggaatg	gcgatctgaa	attcgggatac	60
tttaattgct	tctcgccttc	accgaccgaa	ctcaatttat	agatactccg	tcaacctcaa	120
tcccaactaa	ctagcagttc	cttgctgctg	ctccttcttc	accatatcgc	agtaatgaaa	180
ggtgccgtcc	ttgttgctat	tgcgcgttcc	attggtaatt	tcctccaagg	atgggataat	240
gctaccatcg	ccggggctaa	tggttacatt	aagaaagacc	ttgctttggg	aacaactatg	300
gaaaggcttg	tgggtggcat	gtccctgatt	ggagcaacgg	taatcaccac	atgctctggt	360
cctatagcgg	attggctcgg	tcggcgaccc	atgatgataa	tctcatctgt	gctctatttc	420
ttgggtggtt	tggatgatgct	gtgggtccca	aatgtgtatg	tgttggtgctt	ggcgaggcta	480
cttgatggat	ttgggattgg	cettgctgtg	actcttgccc	cggctctatat	atctgaaacg	540
gcgccgtctg	aaataagggg	gtcgttgaat	acgcttcctc	agttcagtgg	ctctggagga	600
atgtttttgt	cgtactgtat	ggtttttggc	atgtcattga	gtcccgcgcc	tagctggagg	660
ctcatgcttg	gggttctgtc	tattccttct	ctcttgatatt	ttgcattgac	catttttttc	720
ttgcccagagt	ctcctcgggtg	gctggctcagc	aaaggaagga	tgctcgaggc	taagaagggtg	780
ctccaaagat	tgcgcggaag	ggaggatgtg	tcaggcgaga	tggcattgct	ggttgaagggt	840
ctcgggattg	ggggtgatac	atctatcgaa	gagtacataa	ttggccctgc	tgacgatgtg	900
gctgatggtc	atgaacatgc	aacagagaaa	gataaaattc	gatttatatg	atcccaagca	960
ggcctttctt	ggttatcaaa	acctgtcact	ggacagagtt	ctattggcct	tgcgtcacac	1020
catggaagca	tcatcaacca	aagcatgccc	ctcatggatc	ctctgggtgac	actgtttgggt	1080
agcattcatg	agaagctccc	cagacacagga	gcaagaggaa	gcatgcgaag	cactctgttt	1140
ccaaattttg	gaagcatggt	cagcactgct	gagccgcatg	ctaaaattga	acaatgggat	1200
gaagaaagct	tacaaaggga	acgtgaggac	tacatgtcag	atgcaaccgc	tggggactcc	1260
gatgataatt	tgcacagtcc	tttaatctca	cgccaaacaa	caagccttga	aaaagactta	1320
cctcctcctc	cttcccattg	cagtatcctt	ggcagcatga	ggcgtcacag	tagtctcatg	1380
caagggtcag	gtgagcaagg	tggtagtaca	ggtattgggtg	gtggctggca	actggcatgg	1440
aaatggactg	ataaagggtga	ggatggaaaa	caacaaggag	ggtttaaaag	gatttattta	1500
catgaggagg	gagtttctgc	atctcgtcgt	ggatccattg	tatcgattcc	cgggtgaaggc	1560
gaatttgctc	aggctgctgc	cttggttaagc	caaccgcctc	tttactccaa	ggagcttatt	1620
gatggacacc	cagttgggcc	tgcattgggt	caccatctg	agacagcttc	aaaggggcca	1680
agttgaaaag	ctcttcttga	accagggggt	aagcatgcat	tggttggttg	agttggaata	1740
caaatacttc	agcagttttc	agggataaat	gggtttctat	attacacacc	tcaaatecctt	1800
gaagaggccg	gtgttgaagt	tcttctttca	gatataaggca	ttggctcaga	gtcggcatca	1860
ttccttatca	gtgctttcac	aaccttcttg	atgcttccct	gtataggcgt	agccatgaag	1920
ctcatggatg	tttcaggcag	aaggcagttg	ctacttacta	caatccccgt	gctgattgtg	1980
tcactcatta	ttttggtcat	tggaaagcctg	gtaaattttg	gcaatgtcgc	ccatgcagca	2040
atctcaacag	tatgcgttgt	ggtttatttc	tgtctgtttg	tgatgggtta	tggaccaatt	2100
ccaaacatcc	tttgctcaga	gattttcccc	actagggtgc	gtggcctctg	cattgctatc	2160
tgtgcattag	tgttctggat	tggagacatc	atcatcacat	actcgctgcc	tgtgatgtgc	2220
ggctctttag	gacttgggtg	tgtattcgcc	atttacgcag	ttgtttgttt	catctcgtgg	2280
atatttggtg	ttttgaagggt	tccagaaaca	aagggcatgc	cccttgaagt	catctctgaa	2340
ttcttttctg	ttggagcaaa	gcaggctgct	tctgccaaga	atgagtgaca	caacacaagt	2400
ccgttatata	ctctgtaact	ttagttgtta	aagccatcat	ctctcgtctt	tacagatttt	2460
gcttttcata	agtttatittg	gaggaagata	ttttgaaaca	tatgggtttt	tttttctttc	2520
ataaaaaataa	aaccttccc	tttttgggtg	gggaaaagaa	aaaaaaaaaa	aaaaaaaaaa	2580
aaaaaaaaaa	aaaaaaaaaa	a				2601

<210> 8
 <211> 737
 <212> PRT
 <213> Glycine max

<400> 8
 Met Lys Gly Ala Val Leu Val Ala Ile Ala Ala Ser Ile Gly Asn Phe
 1 5 10 15
 Leu Gln Gly Trp Asp Asn Ala Thr Ile Ala Gly Ala Asn Gly Tyr Ile
 20 25 30
 Lys Lys Asp Leu Ala Leu Gly Thr Thr Met Glu Arg Leu Val Val Gly
 35 40 45
 Met Ser Leu Ile Gly Ala Thr Val Ile Thr Thr Cys Ser Gly Pro Ile
 50 55 60
 Ala Asp Trp Leu Gly Arg Arg Pro Met Met Ile Ile Ser Ser Val Leu
 65 70 75 80
 Tyr Phe Leu Gly Gly Leu Val Met Leu Trp Ser Pro Asn Val Tyr Val
 85 90 95
 Leu Cys Leu Ala Arg Leu Leu Asp Gly Phe Gly Ile Gly Leu Ala Val
 100 105 110
 Thr Leu Val Pro Val Tyr Ile Ser Glu Thr Ala Pro Ser Glu Ile Arg
 115 120 125
 Gly Ser Leu Asn Thr Leu Pro Gln Phe Ser Gly Ser Gly Gly Met Phe
 130 135 140
 Leu Ser Tyr Cys Met Val Phe Gly Met Ser Leu Ser Pro Ala Pro Ser
 145 150 155 160
 Trp Arg Leu Met Leu Gly Val Leu Ser Ile Pro Ser Leu Leu Tyr Phe
 165 170 175
 Ala Leu Thr Ile Phe Phe Leu Pro Glu Ser Pro Arg Trp Leu Val Ser
 180 185 190
 Lys Gly Arg Met Leu Glu Ala Lys Lys Val Leu Gln Arg Leu Arg Gly
 195 200 205
 Arg Glu Asp Val Ser Gly Glu Met Ala Leu Leu Val Glu Gly Leu Gly
 210 215 220
 Ile Gly Gly Asp Thr Ser Ile Glu Glu Tyr Ile Ile Gly Pro Ala Asp
 225 230 235 240
 Asp Val Ala Asp Gly His Glu His Ala Thr Glu Lys Asp Lys Ile Arg
 245 250 255
 Leu Tyr Gly Ser Gln Ala Gly Leu Ser Trp Leu Ser Lys Pro Val Thr
 260 265 270
 Gly Gln Ser Ser Ile Gly Leu Ala Ser His His Gly Ser Ile Ile Asn
 275 280 285

Gln Ser Met Pro Leu Met Asp Pro Leu Val Thr Leu Phe Gly Ser Ile
 290 295 300
 His Glu Lys Leu Pro Glu Thr Gly Ala Arg Gly Ser Met Arg Ser Thr
 305 310 315 320
 Leu Phe Pro Asn Phe Gly Ser Met Phe Ser Thr Ala Glu Pro His Ala
 325 330 335
 Lys Ile Glu Gln Trp Asp Glu Glu Ser Leu Gln Arg Glu Arg Glu Asp
 340 345 350
 Tyr Met Ser Asp Ala Thr Arg Gly Asp Ser Asp Asp Asn Leu His Ser
 355 360 365
 Pro Leu Ile Ser Arg Gln Thr Thr Ser Leu Glu Lys Asp Leu Pro Pro
 370 375 380
 Pro Pro Ser His Gly Ser Ile Leu Gly Ser Met Arg Arg His Ser Ser
 385 390 395 400
 Leu Met Gln Gly Ser Gly Glu Gln Gly Gly Ser Thr Gly Ile Gly Gly
 405 410 415
 Gly Trp Gln Leu Ala Trp Lys Trp Thr Asp Lys Gly Glu Asp Gly Lys
 420 425 430
 Gln Gln Gly Gly Phe Lys Arg Ile Tyr Leu His Glu Glu Gly Val Ser
 435 440 445
 Ala Ser Arg Arg Gly Ser Ile Val Ser Ile Pro Gly Glu Gly Glu Phe
 450 455 460
 Val Gln Ala Ala Ala Leu Val Ser Gln Pro Ala Leu Tyr Ser Lys Glu
 465 470 475 480
 Leu Ile Asp Gly His Pro Val Gly Pro Ala Met Val His Pro Ser Glu
 485 490 495
 Thr Ala Ser Lys Gly Pro Ser Trp Lys Ala Leu Leu Glu Pro Gly Val
 500 505 510
 Lys His Ala Leu Val Val Gly Val Gly Ile Gln Ile Leu Gln Gln Phe
 515 520 525
 Ser Gly Ile Asn Gly Val Leu Tyr Tyr Thr Pro Gln Ile Leu Glu Glu
 530 535 540
 Ala Gly Val Glu Val Leu Leu Ser Asp Ile Gly Ile Gly Ser Glu Ser
 545 550 555 560
 Ala Ser Phe Leu Ile Ser Ala Phe Thr Thr Phe Leu Met Leu Pro Cys
 565 570 575
 Ile Gly Val Ala Met Lys Leu Met Asp Val Ser Gly Arg Arg Gln Leu
 580 585 590
 Leu Leu Thr Thr Ile Pro Val Leu Ile Val Ser Leu Ile Ile Leu Val
 595 600 605

Ile Gly Ser Leu Val Asn Phe Gly Asn Val Ala His Ala Ala Ile Ser
610 615 620

Thr Val Cys Val Val Val Tyr Phe Cys Cys Phe Val Met Gly Tyr Gly
625 630 635 640

Pro Ile Pro Asn Ile Leu Cys Ser Glu Ile Phe Pro Thr Arg Val Arg
645 650 655

Gly Leu Cys Ile Ala Ile Cys Ala Leu Val Phe Trp Ile Gly Asp Ile
660 665 670

Ile Ile Thr Tyr Ser Leu Pro Val Met Leu Gly Ser Leu Gly Leu Gly
675 680 685

Gly Val Phe Ala Ile Tyr Ala Val Val Cys Phe Ile Ser Trp Ile Phe
690 695 700

Val Phe Leu Lys Val Pro Glu Thr Lys Gly Met Pro Leu Glu Val Ile
705 710 715 720

Ser Glu Phe Phe Ser Val Gly Ala Lys Gln Ala Ala Ser Ala Lys Asn
725 730 735

Glu

<210> 9
<211> 1692
<212> DNA
<213> Glycine max

<400> 9
gcacgagggg tccgtccaga gaaaaagatc aaattaagtt gtatggacca gaacaaggcc 60
agtcctgggt tgctagacct gttgctggac caaattctgt tggccttgta tctaggaaaag 120
gaagcatggc aaatccaagc agtctagtgg accctctagt gaccctcttt ggtagtgtac 180
atgagaagct cccagaaaca ggaagcacc tttttccaca ctttgggagt atgttcagt 240
ttgggggaaa tcagccaagg aatgaagatt gggatgagga aagcctagcc agagaggggtg 300
atgattatgt ctctgatgct ggtgattctg atgacaattt gcagagtcca ttgatctcac 360
gtcaaacaac gagtctggat aaggacatac ctctcatgct ccatagtaac cttgcaagca 420
tgaggcaagg tagtctttta catggaaatt caggagaacc cactggtagt actgggattg 480
gtggtggttg gcagctagca tggaaatggg ctgaaagaga gggcccagat ggaaagaagg 540
aaggtggctt caagagaata tatttacacc aagatgggtg ttctggatct agacgtgggt 600
ctgtggtttc actccctggc ggtgatttac caactgacag tgaggttgta caggctgctg 660
ctctggtgag tcagcctgcc ctttataatg aggaccttat gcgtcaacgg ccagttggac 720
cagctatgat tcatccctct gaaacaattg caaaagggcc aagttggagt gatctttttg 780
aacctggggg gaagcatgca ttgattgtgg gggtgggaaat gcaaattctt cagcagttct 840
ctggtataaa tggggtcctc tactatacgc ctcaaattct tgagcaggca ggtgttggtt 900
atcttctttc aagcctaggc cttggttcta cttcttcata ctttcttatt agtgcggtga 960
caaccttggt gatgcttct tgtatagcca ttgccatgag gctcatggat atttcaggca 1020
gaaggacttt gctgctcagt acaatcccg tcctaatagc agctcttctc atattagtcc 1080
tggaagtct tgtggatttg ggtccactg caaatgcata aatctcaacc attagtgtta 1140
ttgtctattt ctgtttcttt gtcattgggt ttggaccaat tcctaataata ctttgtgcag 1200
agatcttccc cactcgagtt cgtggtctct gcattgctat ttgtgccctt accttttgga 1260
tctgtgatat cattgtcacc tacacactcc cagttatgct caattctgta ggctctgctg 1320
gtgttttttg tatttatgct gtcgtgtgct tcatagcatg ggtgtttgtc tttttgaaag 1380
ttccagaaac caagggcatg ccaactggaag tgatcattga gttcttctct gtcggagcaa 1440
aacagtttga cgatgccaa cacaactgac ccaaggacat gataaattca aagttttgac 1500
ggtaccttct aattattttc aatctacggc tgtttgaaat tttccctct tttaaaattt 1560

tattttctat ttattctctc ttttccgtgg gttgagattg agaaacaaga aactttgttt 1620
 ctgtaaagaa aaatgttcat tttctggttc atttatggaa ctttatatac ttcctaaaaa 1680
 aaaaaaaaaa aa 1692

<210> 10
 <211> 486
 <212> PRT
 <213> Glycine max

<400> 10

Asp	Pro	Ser	Arg	Glu	Lys	Asp	Gln	Ile	Lys	Leu	Tyr	Gly	Pro	Glu	Gln
1				5					10					15	
Gly	Gln	Ser	Trp	Val	Ala	Arg	Pro	Val	Ala	Gly	Pro	Asn	Ser	Val	Gly
			20					25					30		
Leu	Val	Ser	Arg	Lys	Gly	Ser	Met	Ala	Asn	Pro	Ser	Ser	Leu	Val	Asp
			35				40					45			
Pro	Leu	Val	Thr	Leu	Phe	Gly	Ser	Val	His	Glu	Lys	Leu	Pro	Glu	Thr
	50					55					60				
Gly	Ser	Thr	Leu	Phe	Pro	His	Phe	Gly	Ser	Met	Phe	Ser	Val	Gly	Gly
65					70					75				80	
Asn	Gln	Pro	Arg	Asn	Glu	Asp	Trp	Asp	Glu	Glu	Ser	Leu	Ala	Arg	Glu
				85					90					95	
Gly	Asp	Asp	Tyr	Val	Ser	Asp	Ala	Gly	Asp	Ser	Asp	Asp	Asn	Leu	Gln
			100					105					110		
Ser	Pro	Leu	Ile	Ser	Arg	Gln	Thr	Thr	Ser	Leu	Asp	Lys	Asp	Ile	Pro
		115					120					125			
Pro	His	Ala	His	Ser	Asn	Leu	Ala	Ser	Met	Arg	Gln	Gly	Ser	Leu	Leu
	130					135					140				
His	Gly	Asn	Ser	Gly	Glu	Pro	Thr	Gly	Ser	Thr	Gly	Ile	Gly	Gly	Gly
145					150					155				160	
Trp	Gln	Leu	Ala	Trp	Lys	Trp	Ser	Glu	Arg	Glu	Gly	Pro	Asp	Gly	Lys
				165				170						175	
Lys	Glu	Gly	Gly	Phe	Lys	Arg	Ile	Tyr	Leu	His	Gln	Asp	Gly	Gly	Ser
			180					185					190		
Gly	Ser	Arg	Arg	Gly	Ser	Val	Val	Ser	Leu	Pro	Gly	Gly	Asp	Leu	Pro
		195					200					205			
Thr	Asp	Ser	Glu	Val	Val	Gln	Ala	Ala	Ala	Leu	Val	Ser	Gln	Pro	Ala
	210					215					220				
Leu	Tyr	Asn	Glu	Asp	Leu	Met	Arg	Gln	Arg	Pro	Val	Gly	Pro	Ala	Met
225					230					235				240	
Ile	His	Pro	Ser	Glu	Thr	Ile	Ala	Lys	Gly	Pro	Ser	Trp	Ser	Asp	Leu
				245					250					255	
Phe	Glu	Pro	Gly	Val	Lys	His	Ala	Leu	Ile	Val	Gly	Val	Gly	Met	Gln
			260					265					270		

Ile Leu Gln Gln Phe Ser Gly Ile Asn Gly Val Leu Tyr Tyr Thr Pro
 275 280 285
 Gln Ile Leu Glu Gln Ala Gly Val Gly Tyr Leu Leu Ser Ser Leu Gly
 290 295 300
 Leu Gly Ser Thr Ser Ser Ser Phe Leu Ile Ser Ala Val Thr Thr Leu
 305 310 315 320
 Leu Met Leu Pro Cys Ile Ala Ile Ala Met Arg Leu Met Asp Ile Ser
 325 330 335
 Gly Arg Arg Thr Leu Leu Leu Ser Thr Ile Pro Val Leu Ile Ala Ala
 340 345 350
 Leu Leu Ile Leu Val Leu Gly Ser Leu Val Asp Leu Gly Ser Thr Ala
 355 360 365
 Asn Ala Ser Ile Ser Thr Ile Ser Val Ile Val Tyr Phe Cys Phe Phe
 370 375 380
 Val Met Gly Phe Gly Pro Ile Pro Asn Ile Leu Cys Ala Glu Ile Phe
 385 390 395 400
 Pro Thr Arg Val Arg Gly Leu Cys Ile Ala Ile Cys Ala Leu Thr Phe
 405 410 415
 Trp Ile Cys Asp Ile Ile Val Thr Tyr Thr Leu Pro Val Met Leu Asn
 420 425 430
 Ser Val Gly Leu Ala Gly Val Phe Gly Ile Tyr Ala Val Val Cys Phe
 435 440 445
 Ile Ala Trp Val Phe Val Phe Leu Lys Val Pro Glu Thr Lys Gly Met
 450 455 460
 Pro Leu Glu Val Ile Ile Glu Phe Phe Ser Val Gly Ala Lys Gln Phe
 465 470 475 480
 Asp Asp Ala Lys His Asn
 485

<210> 11
 <211> 510
 <212> DNA
 <213> Triticum aestivum

<220>
 <221> unsure
 <222> (421)

<220>
 <221> unsure
 <222> (434)

<220>
 <221> unsure
 <222> (441)

<220>
 <221> unsure
 <222> (458)

<220>
 <221> unsure
 <222> (483)

<220>
 <221> unsure
 <222> (493)

<220>
 <221> unsure
 <222> (498)

<400> 11
 cgggtggcagc cgggggcagtg aaggaggggt agctcttggc tcctatttga ggcggcttcg 60
 ctcggttctg atctaccgca ccacaccacc acaccacacc aggggcctgc cgcttcttgg 120
 gcttctccat ctcatctcct tggttggttc tctactagag aggggcagct gcagggatcc 180
 ttgggtggaga ggaggggaaga agatgtcggg tgctgcactg gtcgcgattg cggcttccat 240
 tggcaatctg ctgcaggggt gggacaatgc caccatcgct ggtgctgttc tgtacatcaa 300
 gaaggaattc cagctcgaaa ataatccgac tgtggagggg ctcatcgctg catgtcctca 360
 tcgggtgcaa catcatcaca cattctccgg gccagtatca aactgggttg ccggggcccta 420
 ngccatctcc ttgntttcaa ntcccaaggg ctaatcanct aggcaccaat gtcaatgtgc 480
 gcncgggaac cnttcaangg ttggaacggt 510

<210> 12
 <211> 117
 <212> PRT
 <213> Triticum aestivum

<400> 12
 Gly Gly Ser Arg Gly Ser Glu Gly Gly Val Ala Leu Gly Ser Tyr Leu
 1 5 10 15
 Arg Arg Leu Arg Ser Val Leu Ile Tyr Arg Thr Thr Pro Pro His His
 20 25 30
 Thr Arg Gly Leu Pro Leu Leu Gly Leu Leu His Leu Ile Ser Leu Val
 35 40 45
 Gly Ser Leu Leu Glu Arg Arg Ser Cys Arg Asp Pro Trp Trp Arg Gly
 50 55 60
 Gly Lys Lys Met Ser Gly Ala Ala Leu Val Ala Ile Ala Ala Ser Ile
 65 70 75 80
 Gly Asn Leu Leu Gln Gly Trp Asp Asn Ala Thr Ile Ala Gly Ala Val
 85 90 95
 Leu Tyr Ile Lys Lys Glu Phe Gln Leu Glu Asn Asn Pro Thr Val Glu
 100 105 110
 Gly Leu Ile Val Ala
 115

<210> 13
 <211> 1487

<212> DNA
<213> Triticum aestivum

<400> 13

```
tctcttggaa agaggggtggg gaggcagtca gcagcactgg tattggtggg ggggtggcaac 60
tcgcatggaa atggtcggag cgacaaggcg aggatggcaa gaaggaagga ggcttcaaaa 120
gaatctactt gcaccaagag ggggtggccg actcaagaag gggctctgtt gtttcacttc 180
ctgggtggggg tgatgccacg caagggggca gtgggtttat acatgctgct gctttggtaa 240
gccactcggc tctttactcc aaggatctta tggaagagcg tatggcggcc ggtccagcca 300
tgattcatcc attggaggca gctcccaaag gttcaatctg gaaagatctg tttgaacctg 360
gtgtgaggcg tgcattgttc gtcggtgttg gaattcagat gottcagcag tttgctggaa 420
taaatggagt tctctactat actcctcaaa ttctggagca agctgggtgtg gctgttcttc 480
tttccaatct tggcctcagt tcagcatcag catccatctt gatcagttct ctcaccacct 540
tactcatgct cccaagcatt ggtgtagcca tgagacttat ggatataatct ggaagaaggt 600
ttctgctact gggcacaatt cccatcttga tagcatccct aattgttttg ggtgtggtca 660
atgttatcaa cttgagtacg gtgccccacg ctgtgctctc cacagttagc gtcattgtct 720
acttctgctg ctttgtcatg ggctttggcc cgatcccaa cttctatgt gcagagattt 780
tccccaccag agtccgtggt gtctgcatcg ctatttgcgc cctcacattc tggatttgtg 840
acattattgt tacctacagc ctgcctgtga tgctgaatgc tattggtcta gcgggtgtct 900
ttggtatata tgcagtcgtt tgctgcattg ctttgtgtt cgtctaccta aagggtccag 960
agacaaaggg catgcccctc gaggtcatca ccgagttctt tgcggttggg gcgaagcaag 1020
cgcaggccac cattgcctga ttcatcatgg agctttgttt tcagtttgca cactgcggtc 1080
tgcgctgaaa attgcaaatt ggacgggtcc tcgtgaggaa cggaaaaact tttgagttgt 1140
aaatgagaca gctacccaaa gagtcatca cgaggaacgg gaagctgtaa aagtaggagg 1200
atctcatgcc cccatttcat cgtctattat tgcttattag tactgtactg taatcgtcat 1260
tagttgctgt agggttgttc aacttgctaa tctgattctg aactaccatg ctgatgtccg 1320
aaataaagaa aaagcatgtt ttttttgtg tcaacttgca aactttcttt taaacattgt 1380
gcaatgtatt gtaaatttct ttatcaactt ccctcgattc agagagaagc acttgtttgt 1440
aagtcatgaa agatttttct cgacaaaaaa aaaaaaaaaa aaaaaaa 1487
```

<210> 14
<211> 345
<212> PRT
<213> Triticum aestivum

<400> 14

```
Ser Trp Lys Glu Gly Gly Glu Ala Val Ser Ser Thr Gly Ile Gly Gly
  1                      5                      10                      15

Gly Trp Gln Leu Ala Trp Lys Trp Ser Glu Arg Gln Gly Glu Asp Gly
      20                      25                      30

Lys Lys Glu Gly Gly Phe Lys Arg Ile Tyr Leu His Gln Glu Gly Val
      35                      40                      45

Ala Asp Ser Arg Arg Gly Ser Val Val Ser Leu Pro Gly Gly Gly Asp
      50                      55                      60

Ala Thr Gln Gly Gly Ser Gly Phe Ile His Ala Ala Ala Leu Val Ser
      65                      70                      75                      80

His Ser Ala Leu Tyr Ser Lys Asp Leu Met Glu Glu Arg Met Ala Ala
      85                      90                      95

Gly Pro Ala Met Ile His Pro Leu Glu Ala Ala Pro Lys Gly Ser Ile
      100                      105                      110

Trp Lys Asp Leu Phe Glu Pro Gly Val Arg Arg Ala Leu Phe Val Gly
      115                      120                      125
```

Val Gly Ile Gln Met Leu Gln Gln Phe Ala Gly Ile Asn Gly Val Leu
130 135 140

Tyr Tyr Thr Pro Gln Ile Leu Glu Gln Ala Gly Val Ala Val Leu Leu
145 150 155 160

Ser Asn Leu Gly Leu Ser Ser Ala Ser Ala Ser Ile Leu Ile Ser Ser
165 170 175

Leu Thr Thr Leu Leu Met Leu Pro Ser Ile Gly Val Ala Met Arg Leu
180 185 190

Met Asp Ile Ser Gly Arg Arg Phe Leu Leu Leu Gly Thr Ile Pro Ile
195 200 205

Leu Ile Ala Ser Leu Ile Val Leu Gly Val Val Asn Val Ile Asn Leu
210 215 220

Ser Thr Val Pro His Ala Val Leu Ser Thr Val Ser Val Ile Val Tyr
225 230 235 240

Phe Cys Cys Phe Val Met Gly Phe Gly Pro Ile Pro Asn Ile Leu Cys
245 250 255

Ala Glu Ile Phe Pro Thr Arg Val Arg Gly Val Cys Ile Ala Ile Cys
260 265 270

Ala Leu Thr Phe Trp Ile Cys Asp Ile Ile Val Thr Tyr Ser Leu Pro
275 280 285

Val Met Leu Asn Ala Ile Gly Leu Ala Gly Val Phe Gly Ile Tyr Ala
290 295 300

Val Val Cys Cys Ile Ala Phe Val Phe Val Tyr Leu Lys Val Pro Glu
305 310 315 320

Thr Lys Gly Met Pro Leu Glu Val Ile Thr Glu Phe Phe Ala Val Gly
325 330 335

Ala Lys Gln Ala Gln Ala Thr Ile Ala
340 345

<210> 15
<211> 1009
<212> DNA
<213> Triticum aestivum

<400> 15
tgaacctgga gtgaagcatg cactgttcgt tggcatagga ttacagatcc tgcagcagtt 60
tgcgggtatc aatggagtc tctactacac acctcagata cttgagcaag cagggtgtcgg 120
ggttcttcta tcaaacattg gactaagctc ttcttcagca tctattctta ttagtgctt 180
gacaaccttg ctgatgcttc ccagcattgg catcgccatg agactcatgg atatgtcagg 240
aagaaggttt cttctccttt caacaatccc tgtcttgata gtagcgctag ctgtcttgg 300
tttagtgaat gttctggatg tcggaaccat ggtgcacgct gcgctctcaa cgatcagcgt 360
catcgtctat ttctgcttct tcgtcatggg gtttgggcct atcccaaata ttctctgcgc 420
ggagattttc cccacctctg tccgtggcat ctgcatagcc atctgcgcgc taaccttctg 480
gatcggcgac atcatcgtga catacactct ccccgatg ctcaatgcca ttgggtctcgc 540
tggagtcttc ggcataatat ccacgtttt tgtactagcc tttgtattcg tctacatgaa 600
ggtccctgag acaaagggca tgcccctgga ggtcatcacc gagttcttct ctgtcggggc 660
aaagcagggc aaggaagcca cggactagtt gctctgatcc ggtgatccgc gtcgctggtg 720

gtaattttgt ggtgtcataa ctactactac actgggttaac ctgcgatgct ttgggtgaaga 780
aacttcaaag agagcagata cggaagactt tacatcgtga ggctgaattg tgtcgtcgta 840
ggccggcgttt tggaagtagg atatgtactt agatcatctg ctcttttcgc tttggaactt 900
tctattttgtg ttattcagaa tttcttgccc atgtaactag tgctgttatc acaatttatg 960
tcgattatgt gtttgcctaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1009

<210> 16
<211> 228
<212> PRT
<213> Triticum aestivum

<400> 16
Glu Pro Gly Val Lys His Ala Leu Phe Val Gly Ile Gly Leu Gln Ile
1 5 10 15
Leu Gln Gln Phe Ala Gly Ile Asn Gly Val Leu Tyr Tyr Thr Pro Gln
20 25 30
Ile Leu Glu Gln Ala Gly Val Gly Val Leu Leu Ser Asn Ile Gly Leu
35 40 45
Ser Ser Ser Ser Ala Ser Ile Leu Ile Ser Ala Leu Thr Thr Leu Leu
50 55 60
Met Leu Pro Ser Ile Gly Ile Ala Met Arg Leu Met Asp Met Ser Gly
65 70 75 80
Arg Arg Phe Leu Leu Leu Ser Thr Ile Pro Val Leu Ile Val Ala Leu
85 90 95
Ala Val Leu Val Leu Val Asn Val Leu Asp Val Gly Thr Met Val His
100 105 110
Ala Ala Leu Ser Thr Ile Ser Val Ile Val Tyr Phe Cys Phe Phe Val
115 120 125
Met Gly Phe Gly Pro Ile Pro Asn Ile Leu Cys Ala Glu Ile Phe Pro
130 135 140
Thr Ser Val Arg Gly Ile Cys Ile Ala Ile Cys Ala Leu Thr Phe Trp
145 150 155 160
Ile Gly Asp Ile Ile Val Thr Tyr Thr Leu Pro Val Met Leu Asn Ala
165 170 175
Ile Gly Leu Ala Gly Val Phe Gly Ile Tyr Ala Ile Val Cys Val Leu
180 185 190
Ala Phe Val Phe Val Tyr Met Lys Val Pro Glu Thr Lys Gly Met Pro
195 200 205
Leu Glu Val Ile Thr Glu Phe Phe Ser Val Gly Ala Lys Gln Gly Lys
210 215 220
Glu Ala Thr Asp
225

<210> 17
<211> 615

<212> DNA
<213> Zea mays

<220>
<221> unsure
<222> (149)

<220>
<221> unsure
<222> (271)

<220>
<221> unsure
<222> (304)

<220>
<221> unsure
<222> (334)

<220>
<221> unsure
<222> (357)

<220>
<221> unsure
<222> (476)

<220>
<221> unsure
<222> (599)

<220>
<221> unsure
<222> (602)

<400> 17
gaaacgaact ctcttgagta ccacaaaaaa aaacattggc attctctgta gtagagcaca 60
gagcgaaccg tcaacgatgg ctcccgctcc gctgccggcg gccatcgagc ccggaagaa 120
aggcaacgtc aagttcgctt tcgctgcnc catcctcgcc tcaatgacct ccctccttct 180
cggctatgat atcggagtga tgagcggcgc gtggttgtag atcaagaagg acctgaaaat 240
cagcgacgtg aagctggaga tcctgatggg natcctcaac gtgtactcgc tcatcggctc 300
gttngcggca gggcggacgt ccgactggat cggncgcgt acaccatcgt gttcgcngcg 360
gtgatcttct tcgcgggcgc ttctcatgg gcttcgccgt gaactactgg atgctcatgt 420
tcgggcgctt cgtggccggg atcggcgtgg gtaacgcgt catgatcgca accgtntaca 480
cggccgaagt gtccccgcat cggcccgcg ctctctgacg tcgttcccgg aggtgttcat 540
cacttcggca tcctctaggt acgtgtcaat aaggcttttc cgcttccgtt cgctggatng 600
cnctaattgc ggcat 615

<210> 18
<211> 167
<212> PRT
<213> Zea mays

<220>
<221> UNSURE
<222> (34)

<220>
<221> UNSURE
<222> (85)

<220>
 <221> UNSURE
 <222> (98)

<220>
 <221> UNSURE
 <222> (112)

<220>
 <221> UNSURE
 <222> (151)

<400> 18
 Ser Arg Ala Gln Ser Glu Pro Ser Thr Met Ala Ser Ala Pro Leu Pro
 1 5 10 15
 Ala Ala Ile Glu Pro Gly Lys Lys Gly Asn Val Lys Phe Ala Phe Ala
 20 25 30
 Cys Xaa Ile Leu Ala Ser Met Thr Ser Ile Leu Leu Gly Tyr Asp Ile
 35 40 45
 Gly Val Met Ser Gly Ala Ser Leu Tyr Ile Lys Lys Asp Leu Lys Ile
 50 55 60
 Ser Asp Val Lys Leu Glu Ile Leu Met Gly Ile Leu Asn Val Tyr Ser
 65 70 75 80
 Leu Ile Gly Ser Xaa Ala Ala Gly Arg Thr Ser Asp Trp Ile Gly Arg
 85 90 95
 Arg Xaa Thr Ile Val Phe Ala Ala Val Ile Phe Phe Ala Gly Ala Xaa
 100 105 110
 Leu Met Gly Phe Ala Val Asn Tyr Trp Met Leu Met Phe Gly Arg Phe
 115 120 125
 Val Ala Gly Ile Gly Val Gly Tyr Ala Leu Met Ile Ala Thr Val Tyr
 130 135 140
 Thr Ala Glu Val Ser Pro Xaa Ser Ala Arg Gly Phe Leu Thr Ser Phe
 145 150 155 160
 Pro Glu Val Phe Ile Thr Ser
 165

<210> 19
 <211> 1914
 <212> DNA
 <213> Zea mays

<400> 19
 gcacgaggca cgccacctta tctotaaccg gagatcaaag aagtagccgt taacgatggc 60
 ttccgacgag ctgcgaaagg cgtcgagcc caggaagaag ggcaacgtca agtatgcctc 120
 catatgtgcc atcctggcct ccatggcctc tgtcatcctt ggctatgaca ttggggtgat 180
 gagtggagcg gccatgtaca tcaagaagga cctgaatatc acggacgtgc agctggagat 240
 cctgatcggg atcctcagtc tctactcgct gttcggatcc ttcgctggcg cgcggacgtc 300
 cgacaggatc gggcgccgct tgaccgtcgt gttcggcgt gtcattcttct tcgtgggctc 360
 gtgtctcatg ggtttcgccg tcaactacgg catgctcatg gcgggcccgt tcgtggccgg 420

```

agtcggtgtg ggctacgggg gcatgatcgc gcccggtgtac acggccgaga tctcgctgc 480
ggcgctcccggt ggcttcctga ccaccttccc ggaggtgttc atcaacatcg gcatcctgct 540
tggttacctg tccaacttcg cgttcgcgcg cctcccgcgc cacctcggct ggcgcgctcat 600
gctcgccatt ggccgagttc cgtccggcct gctcgcgctc ctgggtgttct gcatgcccga 660
gtcgccctcg tggctggtct tgaagggccg cctcgcgagac gccagggctg tgctagagaa 720
gacctctgcc acgccagagg aggcgcgcga gcggtggcc gacatcaagg ccgcggcggg 780
gattccgaag ggccctcgacg gggacgtagt caccgtaccc ggcaaggagc aaggcgcgcg 840
tgagttgcag gtgtggaaga agctcatcct gtccccgacc ccggctgtcc gacgcatact 900
gctctcggcc gtgggtctcc acttcttcca gcaggcttct ggcagcgact ccgtcgtcca 960
gtacagcgcc cgctgttca agagcgcggg gatcacggac gacaacaagc tcctgggctg 1020
cacctgcgcg gtgggctga ccaagacgtt cttcatcctg gtggccacgt tcctgctgga 1080
ccgcgcgggg cgtcgccctc tgctgctgat cagcacgggc gggatgattg tctcgctcat 1140
ctgcctcggg tcggggctca ccgtcgcggg gcatcaccgc gacaccaagg tcgctggggc 1200
cgtcgcccctg tgcctcgctg caaccctgtc ctacatcgcc ttcttctcca tcggcctcgg 1260
gcccattcacg ggcgtgtaca cctcggaat attcccgtg cagggtgcgcg cgctgggctt 1320
cgcggtgggt gtggcgagca accgcgtcac cagegcgcgc atctccatga ccttcctgtc 1380
cctctccaag gccatcacca tcggcgcgag cttcttctc tactccggca tcgcccggt 1440
cgcttgggtt ttcttcttca cgtgcctccc ggagacacgc ggccggacgc tggaggagat 1500
gggcaagctg ttcggcatgc cagacacggg catggctgaa gaagcagaag acgccgcagc 1560
caaggagaag gtggtggaac tgcctagcag caagtaggtg gctatcccag agcacaggctc 1620
aagtgaagta gatggacaag atcattgtct tttcaactaa ttagatgggc aagaataact 1680
aagactgccc tatgaggtgt cgtggttcaa ccagagatca ttctgctcct tttcttttcc 1740
cttccttttt cgagtacat tcccattcgt cgtggtcagt acgatgttgg gtcgttggga 1800
gttagtggtg tcagagtccg cgtgtgcttt gcaagccagg gctgaacca caatcatcag 1860
taacaaaaat tcttcgctt gctttgcaag ccaaaaaaaa aaaaaaaa aaaa 1914

```

```

<210> 20
<211> 513
<212> PRT
<213> Zea mays

```

```

<400> 20
Met Ala Ser Asp Glu Leu Ala Lys Ala Val Glu Pro Arg Lys Lys Gly
 1          5          10          15
Asn Val Lys Tyr Ala Ser Ile Cys Ala Ile Leu Ala Ser Met Ala Ser
 20          25          30
Val Ile Leu Gly Tyr Asp Ile Gly Val Met Ser Gly Ala Ala Met Tyr
 35          40          45
Ile Lys Lys Asp Leu Asn Ile Thr Asp Val Gln Leu Glu Ile Leu Ile
 50          55          60
Gly Ile Leu Ser Leu Tyr Ser Leu Phe Gly Ser Phe Ala Gly Ala Arg
 65          70          75          80
Thr Ser Asp Arg Ile Gly Arg Arg Leu Thr Val Val Phe Ala Ala Val
 85          90          95
Ile Phe Phe Val Gly Ser Leu Leu Met Gly Phe Ala Val Asn Tyr Gly
100          105          110
Met Leu Met Ala Gly Arg Phe Val Ala Gly Val Gly Val Gly Tyr Gly
115          120          125
Gly Met Ile Ala Pro Val Tyr Thr Ala Glu Ile Ser Pro Ala Ala Ser
130          135          140

```

Arg Gly Phe Leu Thr Thr Phe Pro Glu Val Phe Ile Asn Ile Gly Ile
145 150 155 160

Leu Leu Gly Tyr Leu Ser Asn Phe Ala Phe Ala Arg Leu Pro Leu His
165 170 175

Leu Gly Trp Arg Val Met Leu Ala Ile Gly Ala Val Pro Ser Gly Leu
180 185 190

Leu Ala Leu Leu Val Phe Cys Met Pro Glu Ser Pro Arg Trp Leu Val
195 200 205

Leu Lys Gly Arg Leu Ala Asp Ala Arg Ala Val Leu Glu Lys Thr Ser
210 215 220

Ala Thr Pro Glu Glu Ala Ala Glu Arg Leu Ala Asp Ile Lys Ala Ala
225 230 235 240

Ala Gly Ile Pro Lys Gly Leu Asp Gly Asp Val Val Thr Val Pro Gly
245 250 255

Lys Glu Gln Gly Gly Gly Glu Leu Gln Val Trp Lys Lys Leu Ile Leu
260 265 270

Ser Pro Thr Pro Ala Val Arg Arg Ile Leu Leu Ser Ala Val Gly Leu
275 280 285

His Phe Phe Gln Gln Ala Ser Gly Ser Asp Ser Val Val Gln Tyr Ser
290 295 300

Ala Arg Leu Phe Lys Ser Ala Gly Ile Thr Asp Asp Asn Lys Leu Leu
305 310 315 320

Gly Val Thr Cys Ala Val Gly Val Thr Lys Thr Phe Phe Ile Leu Val
325 330 335

Ala Thr Phe Leu Leu Asp Arg Ala Gly Arg Arg Pro Leu Leu Leu Ile
340 345 350

Ser Thr Gly Gly Met Ile Val Ser Leu Ile Cys Leu Gly Ser Gly Leu
355 360 365

Thr Val Ala Gly His His Pro Asp Thr Lys Val Ala Trp Ala Val Ala
370 375 380

Leu Cys Ile Ala Ser Thr Leu Ser Tyr Ile Ala Phe Phe Ser Ile Gly
385 390 395 400

Leu Gly Pro Ile Thr Gly Val Tyr Thr Ser Glu Ile Phe Pro Leu Gln
405 410 415

Val Arg Ala Leu Gly Phe Ala Val Gly Val Ala Ser Asn Arg Val Thr
420 425 430

Ser Ala Val Ile Ser Met Thr Phe Leu Ser Leu Ser Lys Ala Ile Thr
435 440 445

Ile Gly Gly Ser Phe Phe Leu Tyr Ser Gly Ile Ala Ala Val Ala Trp
450 455 460

Val Phe Phe Phe Thr Cys Leu Pro Glu Thr Arg Gly Arg Thr Leu Glu
 465 470 475 480

Glu Met Gly Lys Leu Phe Gly Met Pro Asp Thr Gly Met Ala Glu Glu
 485 490 495

Ala Glu Asp Ala Ala Ala Lys Glu Lys Val Val Glu Leu Pro Ser Ser
 500 505 510

Lys

<210> 21
 <211> 2017
 <212> DNA
 <213> Oryza sativa

<400> 21
 cttacatgta agctcgtgcc ggcacgagct tacactcgac cgccactact gtacacggcc 60
 cagagcgagc ctctctctcc tctgcaccac cggagatggc ttccgcgcgc ctgccggagg 120
 ccgtcgcgcc gaagaagaag ggcaacgtcc gggtcgcctt cgctcgcgcc atcctcgcct 180
 ccatgacctc catcctcctc ggctacgata tcgggggtgat gagcggggcg tcgctgtaca 240
 tcaagaagga cttcaacatc agtgacggga aggtggagggt tctcatgggc atactgaacc 300
 tctactcgct catcggctcc ttccgcgcgc ggcggacgtc ggactggatc ggccggcggt 360
 acaccatcgt gttcgcgcgc gtcataattct tcgcgggggs gttcctcatg gggttcgcgc 420
 tcaactacgc catgctcatg ttccggccgct tcgtggccgc catcggcgtg ggctacgcgc 480
 tcatgatcgc gccggtgtac accgccgagg tgccgcgcgc gtcggcgcggt ggcttctga 540
 cgtcgttccc ggaggtgttc atcaacttcg gcatcctgct cgggtacgtc tcgaactatg 600
 ctttctcccc cttgccgctg aacctcgggt ggcgcacat gctcggcatc ggccggcgcc 660
 cgtccgtgct gctcgcgcgc atggtgctcg gcatgccgga gtcgcgcgcg tggctggtca 720
 tgaagggacg cctcgcggac gccaaagtgg tgctggagaa gacctccgac acggcggagg 780
 aggcgcgcga gcgcctggcc gacatcaagg ccgcgcgcgc catccctgag gagctcgacg 840
 gcgacgtggt gaccgtcccc aagagaggga gcggaacga gaagcgggtg tggaaggagc 900
 tcatcctgtc cccgaccccg gccatgcggc gcatcctgct gtcgggcatc ggcattccact 960
 tcttccagca tgcgttgggc attcactccg tcgtcttcta cagccctctc gtgttcaaga 1020
 gccccggatt aacgaacgac aaacacttct tgggcaccac ttggccgttc ggtgtcacca 1080
 agaggctttt catcttgttg gcgactttct tcatcgacgg cgtcggcgcg cgcccgctgt 1140
 tgctgggcag cacgggcggg ataactctct cctcatcgg cctcggcgcc gggctcaccg 1200
 tcgtcggcca gcaccccgac gccaaagata cttgggccaat cggcctaagc atcgcctcca 1260
 cctcgccta cgtcgccttc ttctccatcg gccttggccc catcacgtgg gtgtacagct 1320
 cggagatctt ccgctccag gtgcgcgcgc tgggtgctc gctcggcgct gccgccaacc 1380
 gcgtcaccag cggcgtcatc tccatgacct tcctgtcgtc gtccaaggcc atcaccatcg 1440
 gcggcagctt ctctctctac tccggcatcg ccgcgctcgc ctgggtgttc ttctacacct 1500
 acctcccga gaccgcggc cggacgctgg aggagatgag caagctgttc ggcgacacgg 1560
 ccgcgcctc ggaatcagac gagccagcca aggagaagaa gaaggtggaa atggccgcca 1620
 ctaactgatc aaactaaccg caaaatcacc aaatcctaag ggttttcttg caaaaacgtg 1680
 tgctgtactg gctagctagc aagtagtagc agcaacgtgg gaagattcgc tgatccggcg 1740
 ttgctggaga gcgacggccg gcgacgacaa agctgagctc cagctcgaga cttcttaaaa 1800
 tcatcttcaa gtacatggat tttattttgc tctttgcttt gtccgtaaaa gttgtactat 1860
 gcgatgaaga ataccagtat gtagcaaggc tgaggttgtg tgtagctact agaagtgtca 1920
 gtcacgttgt tcttgaaga aatgtttaac tgtaatttaa gcagtattgt tgcagtaatc 1980
 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaa 2017

<210> 22
 <211> 510
 <212> PRT
 <213> Oryza sativa

<220>

<221> UNSURE

<222> (102)

<400> 22

Met Ala Ser Ala Ala Leu Pro Glu Ala Val Ala Pro Lys Lys Lys Gly
1 5 10 15
Asn Val Arg Phe Ala Phe Ala Cys Ala Ile Leu Ala Ser Met Thr Ser
20 25 30
Ile Leu Leu Gly Tyr Asp Ile Gly Val Met Ser Gly Ala Ser Leu Tyr
35 40 45
Ile Lys Lys Asp Phe Asn Ile Ser Asp Gly Lys Val Glu Val Leu Met
50 55 60
Gly Ile Leu Asn Leu Tyr Ser Leu Ile Gly Ser Phe Ala Ala Gly Arg
65 70 75 80
Thr Ser Asp Trp Ile Gly Arg Arg Tyr Thr Ile Val Phe Ala Ala Val
85 90 95
Ile Phe Phe Ala Gly Xaa Phe Leu Met Gly Phe Ala Val Asn Tyr Ala
100 105 110
Met Leu Met Phe Gly Arg Phe Val Ala Gly Ile Gly Val Gly Tyr Ala
115 120 125
Leu Met Ile Ala Pro Val Tyr Thr Ala Glu Val Ser Pro Ala Ser Ala
130 135 140
Arg Gly Phe Leu Thr Ser Phe Pro Glu Val Phe Ile Asn Phe Gly Ile
145 150 155 160
Leu Leu Gly Tyr Val Ser Asn Tyr Ala Phe Ser Arg Leu Pro Leu Asn
165 170 175
Leu Gly Trp Arg Ile Met Leu Gly Ile Gly Ala Ala Pro Ser Val Leu
180 185 190
Leu Ala Leu Met Val Leu Gly Met Pro Glu Ser Pro Arg Trp Leu Val
195 200 205
Met Lys Gly Arg Leu Ala Asp Ala Lys Val Val Leu Glu Lys Thr Ser
210 215 220
Asp Thr Ala Glu Glu Ala Ala Glu Arg Leu Ala Asp Ile Lys Ala Ala
225 230 235 240
Ala Gly Ile Pro Glu Glu Leu Asp Gly Asp Val Val Thr Val Pro Lys
245 250 255
Arg Gly Ser Gly Asn Glu Lys Arg Val Trp Lys Glu Leu Ile Leu Ser
260 265 270
Pro Thr Pro Ala Met Arg Arg Ile Leu Leu Ser Gly Ile Gly Ile His
275 280 285

Phe Phe Gln His Ala Leu Gly Ile His Ser Val Val Phe Tyr Ser Pro
 290 295 300
 Leu Val Phe Lys Ser Pro Gly Leu Thr Asn Asp Lys His Phe Leu Gly
 305 310 315 320
 Thr Thr Trp Pro Phe Gly Val Thr Lys Arg Leu Phe Ile Leu Leu Ala
 325 330 335
 Thr Phe Phe Ile Asp Gly Val Gly Arg Arg Pro Leu Leu Leu Gly Ser
 340 345 350
 Thr Gly Gly Ile Ile Leu Ser Leu Ile Gly Leu Gly Ala Gly Leu Thr
 355 360 365
 Val Val Gly Gln His Pro Asp Ala Lys Ile Pro Trp Ala Ile Gly Leu
 370 375 380
 Ser Ile Ala Ser Thr Leu Ala Tyr Val Ala Phe Phe Ser Ile Gly Leu
 385 390 395 400
 Gly Pro Ile Thr Trp Val Tyr Ser Ser Glu Ile Phe Pro Leu Gln Val
 405 410 415
 Arg Ala Leu Gly Cys Ser Leu Gly Val Ala Ala Asn Arg Val Thr Ser
 420 425 430
 Gly Val Ile Ser Met Thr Phe Leu Ser Leu Ser Lys Ala Ile Thr Ile
 435 440 445
 Gly Gly Ser Phe Phe Leu Tyr Ser Gly Ile Ala Ala Leu Ala Trp Val
 450 455 460
 Phe Phe Tyr Thr Tyr Leu Pro Glu Thr Arg Gly Arg Thr Leu Glu Glu
 465 470 475 480
 Met Ser Lys Leu Phe Gly Asp Thr Ala Ala Ala Ser Glu Ser Asp Glu
 485 490 495
 Pro Ala Lys Glu Lys Lys Lys Val Glu Met Ala Ala Thr Asn
 500 505 510

<210> 23
 <211> 1853
 <212> DNA
 <213> Glycine max

<400> 23
 gcacgagagt ttctctcttc acatatcatc atacttagat agtcagatac atcacccaat 60
 aattaaatta aatacatgct agcactttaaa cagtactcct ttctctaata tctctctcat 120
 attttccctt ctgcggatat tcagctaatt aaactaagtc actaagatga ctgagggaaa 180
 gctagttgaa gctgcagaag ctcataagac acttcaggat ttcgatcctc caaagaagcg 240
 caaaaggaac aagtatgctt ttgcttgtgc tatgctggcc tccatgactt ccatcttgct 300
 tggttatgat attggagtga tgagtggagc agccatatac ataaaaaggg acctgaaagt 360
 ctcgagacgag caaatcgaga tcctgctcgg aatcatcaac ctatactctc tgataggctc 420
 atgtctcgcc ggcagaacct ccgactggat aggtccccgt tacacgattg ttttcgccgg 480
 caccatcttc tttgtcggag cacttctcat gggtttctcc cccaattatt ctttctcat 540
 gtttgccgt ttctgcgctg gcattggcat cggctacgcc ctcatgatag ccccgctcta 600
 caccgccgag gtctccccgg cctcctctcg tggttctctc acttctctcc ctgaggtatt 660
 tattaatgga gggatattaa ttggatacat atcaaactat gcattttcga agctgacact 720


```

aaagggtggga tggcgaatga tgcttgagg tgggtgcaata ccttcggtac tcctaacagt 780
aggagtgttg gcgatgccgg agtcccccaag gtggcttggt atgaggggtc gtttgggaga 840
ggcaagaaaaa gtgcttaaca aaacctcaga cagcaaggaa gagggccaac taaggctagc 900
ggaaatcaaaa caagccgcag ggatccccga gagttgcaac gacgacgtcg ttcaggtaaa 960
taaacaaaagc aacgggtgaag gtgtatggaa agagctcttc ctctatocaa cgcccgcaat 1020
tcgtcacatc gtaatcgctg cccttggtat tcacttcttc caacaagcgt cgggcgtaga 1080
cgccgtcggt ttgtacagcc ccaggatctt cgaaaagggt gggattacaa acgacacgca 1140
taagcttctt gcaaccgtgg ccgttggtatt cgtaagacc gtgttcatct tggcggctac 1200
gtttacgttg gaccgcgtgg gtcgtcgctc gttgttattg tctagtgtcg gcggcatggt 1260
gctctcgctt ctcacgcttg cgatcagcct cactgttatt gatcattogg agaggaaatt 1320
aatgtgggcc gttggatcga gcatagccat ggtgttggtt tacgtggcca cgttctccat 1380
cgggtgcgggt cccatcacgt gggctctatag ttctgagatc ttcccgttga ggctgcgggc 1440
gcarggtgcg gccgcgggag ttgcggtgaa taggaccact agcgcggttg tctcaatgac 1500
ttttctgtcc ctcactagag ccatcactat tgggtggagct ttcttctctt attgtggcat 1560
tgctactgtt ggggtggatat tcttttacac cgtcttgccct gagaccocgg gaaaaacgct 1620
cgaagacatg gaagggtctt ttggtacttt taggtccaaa tccaacgcca gcaaggctgt 1680
agaaaatgag aatgggcaag tagcacaagt ccagctagga accaatgtcc aaacttgaaa 1740
aatgagtatt gggacatcca gtaatagtga agtaatttcg tgattttttt tttgtttttt 1800
acttttttaga ctagtctctt aaatcaaaac gagaagttaa agtgaaaaaa aaa 1853

```

```

<210> 24
<211> 523
<212> PRT
<213> Glycine max

```

```

<400> 24
Met Thr Glu Gly Lys Leu Val Glu Ala Ala Glu Ala His Lys Thr Leu
  1              5              10              15

Gln Asp Phe Asp Pro Pro Lys Lys Arg Lys Arg Asn Lys Tyr Ala Phe
      20              25              30

Ala Cys Ala Met Leu Ala Ser Met Thr Ser Ile Leu Leu Gly Tyr Asp
      35              40              45

Ile Gly Val Met Ser Gly Ala Ala Ile Tyr Ile Lys Arg Asp Leu Lys
      50              55              60

Val Ser Asp Glu Gln Ile Glu Ile Leu Leu Gly Ile Ile Asn Leu Tyr
      65              70              75              80

Ser Leu Ile Gly Ser Cys Leu Ala Gly Arg Thr Ser Asp Trp Ile Gly
      85              90              95

Pro Arg Tyr Thr Ile Val Phe Ala Gly Thr Ile Phe Phe Val Gly Ala
      100             105             110

Leu Leu Met Gly Phe Ser Pro Asn Tyr Ser Phe Leu Met Phe Gly Arg
      115             120             125

Phe Val Ala Gly Ile Gly Ile Gly Tyr Ala Leu Met Ile Ala Pro Val
      130             135             140

Tyr Thr Ala Glu Val Ser Pro Ala Ser Ser Arg Gly Phe Leu Thr Ser
      145             150             155             160

Phe Pro Glu Val Phe Ile Asn Gly Gly Ile Leu Ile Gly Tyr Ile Ser
      165             170             175

```

Asn	Tyr	Ala	Phe	Ser	Lys	Leu	Thr	Leu	Lys	Val	Gly	Trp	Arg	Met	Met	
			180					185						190		
Leu	Gly	Val	Gly	Ala	Ile	Pro	Ser	Val	Leu	Leu	Thr	Val	Gly	Val	Leu	
		195					200					205				
Ala	Met	Pro	Glu	Ser	Pro	Arg	Trp	Leu	Val	Met	Arg	Gly	Arg	Leu	Gly	
	210					215					220					
Glu	Ala	Arg	Lys	Val	Leu	Asn	Lys	Thr	Ser	Asp	Ser	Lys	Glu	Glu	Ala	
225					230					235					240	
Gln	Leu	Arg	Leu	Ala	Glu	Ile	Lys	Gln	Ala	Ala	Gly	Ile	Pro	Glu	Ser	
				245				250						255		
Cys	Asn	Asp	Asp	Val	Val	Gln	Val	Asn	Lys	Gln	Ser	Asn	Gly	Glu	Gly	
			260					265					270			
Val	Trp	Lys	Glu	Leu	Phe	Leu	Tyr	Pro	Thr	Pro	Ala	Ile	Arg	His	Ile	
		275					280						285			
Val	Ile	Ala	Ala	Leu	Gly	Ile	His	Phe	Phe	Gln	Gln	Ala	Ser	Gly	Val	
	290					295					300					
Asp	Ala	Val	Val	Leu	Tyr	Ser	Pro	Arg	Ile	Phe	Glu	Lys	Ala	Gly	Ile	
305					310					315					320	
Thr	Asn	Asp	Thr	His	Lys	Leu	Leu	Ala	Thr	Val	Ala	Val	Gly	Phe	Val	
				325					330					335		
Lys	Thr	Val	Phe	Ile	Leu	Ala	Ala	Thr	Phe	Thr	Leu	Asp	Arg	Val	Gly	
			340					345					350			
Arg	Arg	Pro	Leu	Leu	Leu	Ser	Ser	Val	Gly	Gly	Met	Val	Leu	Ser	Leu	
		355					360					365				
Leu	Thr	Leu	Ala	Ile	Ser	Leu	Thr	Val	Ile	Asp	His	Ser	Glu	Arg	Lys	
	370					375					380					
Leu	Met	Trp	Ala	Val	Gly	Ser	Ser	Ile	Ala	Met	Val	Leu	Ala	Tyr	Val	
385					390					395					400	
Ala	Thr	Phe	Ser	Ile	Gly	Ala	Gly	Pro	Ile	Thr	Trp	Val	Tyr	Ser	Ser	
				405				410						415		
Glu	Ile	Phe	Pro	Leu	Arg	Leu	Arg	Ala	Gln	Gly	Ala	Ala	Ala	Gly	Val	
			420					425					430			
Ala	Val	Asn	Arg	Thr	Thr	Ser	Ala	Val	Val	Ser	Met	Thr	Phe	Leu	Ser	
		435					440					445				
Leu	Thr	Arg	Ala	Ile	Thr	Ile	Gly	Gly	Ala	Phe	Phe	Leu	Tyr	Cys	Gly	
	450					455					460					
Ile	Ala	Thr	Val	Gly	Trp	Ile	Phe	Phe	Tyr	Thr	Val	Leu	Pro	Glu	Thr	
465					470					475					480	
Arg	Gly	Lys	Thr	Leu	Glu	Asp	Met	Glu	Gly	Ser	Phe	Gly	Thr	Phe	Arg	
				485					490					495		

Ser Lys Ser Asn Ala Ser Lys Ala Val Glu Asn Glu Asn Gly Gln Val
 500 505 510

Ala Gln Val Gln Leu Gly Thr Asn Val Gln Thr
 515 520

<210> 25
 <211> 2089
 <212> DNA
 <213> Triticum aestivum

<400> 25
 agcaccacta aactatacac aaggaggacc tcgtcggcat aatcctcagg cagcagacag 60
 aggggcgctg tcgacgatgg accgcgcgcg actcccggcg gccgtcgagc ccaagaagaa 120
 gggcaacgtg aggttcgcct tcgcctgcgc catcctcgcc tccatgaact ccatcctcct 180
 cggctacgac atcggcgtga tgagcggagc gtcgctgtac atccagaagg atctgaagat 240
 caacgacacc cagctggagg tcctcatggg catcctcaac gtgtactcgc tcattggctc 300
 cttcgcggcg gggcggacgt ccgactggat cggccggcgc ttcaaccatcg tcttcgcgcg 360
 cgtcatcttc ttcgcgggcg ccctcatcat gggcttctcc gtcaactacg ccatgctcat 420
 gttcggggcg ttcgtggccg gcatcggcgt ggggtacgct ctcatgatcg cgcccgtaga 480
 cacgggagag gtgtcccccg cgtctgcccg tggggttctc acatccttcc cggagggtgt 540
 catcaacttc ggcatacctc tcggatatgt ctccaacttc gccttcgccc gcctctccct 600
 ccgcctcggc tggcgcatta tgctcggcat aggcgcgggtg ccgtccgtcc tgctcgcgtt 660
 catggtgctc ggcataccccg agtctccccg gtggctcgct atgaaggggc gtctcgcgga 720
 cgccaagggt gtgcttgcca agacgtccga cacgcgggaa gaggccgcgc agcgcacgac 780
 cgacattaag actgcccgcg gcatccctct gggcctcgac ggcgacgtgg tccccgtgcc 840
 caaaaacaaa ggaagcagcg aggagaagcg cgttttgaag gacctcatcc tgtcaccgac 900
 catagccatg cgccacatcc tcatcgcggg aatcggcatc caattcttcc agcagtcttc 960
 gggcatcgac gccgtcgtgc tctacagccc gctagttttc aagagcgccg gcatcacggg 1020
 cgacagccgt ctccgcggca ccaccgtggc ggtcggggcc accaatacgg tcttcatect 1080
 ggtggccacc ttctcctcgc accgcacccg ccggcggccg ctggtgctga ccagcacggg 1140
 cggcatgctc gtctccttag tgggcctcgc gacggggctc accgtcatca gccgccacce 1200
 ggacgagaag atcacctggg ccatcgctct gtgcatcttc tgcatactgg cctacgtggc 1260
 cttcttctcc atcggcctcg gcccatacac gtgggtgtac agctcggaga tcttcccgtc 1320
 gcacgtgcgc gcgtgggct gctccctggg cgtggccgtc aaccgcctga ccagcggcgt 1380
 gatctccatg accttcattt cgctgtccaa ggccatgacc atcggcggcg ccttcttctc 1440
 cttcgcggcg atcgctcat tcgcatgggt gttcttcttc gcctacctgc cggagaccgc 1500
 cggccgcacg ctggaggaca tgagctcgct gttcggcaac acggccacgc acaagcaggg 1560
 cgccgcggaa gccgacgacg acgcccggga gaagaagggt gaaatggccg ccaccaactg 1620
 accgcaagtt ggcagatcgc gatgcgaaga cttgcgctgt atccgtctcg gctagctagc 1680
 tgccacaagg ccacatagat gacgaagtag cgtgggaaga ttcgctgatc cggccggagc 1740
 tgccggaggg cgacggcaag ctccagctcg atcgagacgt taatggcttc ttaaagtgtc 1800
 taagttaaat gtttcgctct ttggttttgt ccgggtagggt cgtgagcaat ccggtagtgc 1860
 cgatgccaaag gctaatacgac gccggacgga ctgactact gtagtagact gtagaggtgt 1920
 accgttgcta cttccgtggc gtttgtctgc atgattagga gagaaaactg gcggtggttc 1980
 gaggactcta cctgccgatc gagtgagtca agcgagccac ggaaaatgtg taagaaaaaa 2040
 atattaagta tgtgtattgt aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 2089

<210> 26
 <211> 539
 <212> PRT
 <213> Triticum aestivum

<400> 26
 Ala Pro Leu Asn Tyr Thr Gln Gly Gly Pro Arg Arg His Asn Pro Gln
 1 5 10 15

Ala Ala Ser Arg Gly Ala Ser Ser Thr Met Asp Arg Ala Ala Leu Pro
 20 25 30

Ala Thr Asn Thr Val Phe Ile Leu Val Ala Thr Phe Leu Leu Asp Arg
355 360 365

Ile Arg Arg Arg Pro Leu Val Leu Thr Ser Thr Gly Gly Met Leu Val
370 375 380

Ser Leu Val Gly Leu Ala Thr Gly Leu Thr Val Ile Ser Arg His Pro
385 390 395 400

Asp Glu Lys Ile Thr Trp Ala Ile Val Leu Cys Ile Phe Cys Ile Met
405 410 415

Ala Tyr Val Ala Phe Phe Ser Ile Gly Leu Gly Pro Ile Thr Trp Val
420 425 430

Tyr Ser Ser Glu Ile Phe Pro Leu His Val Arg Ala Leu Gly Cys Ser
435 440 445

Leu Gly Val Ala Val Asn Arg Leu Thr Ser Gly Val Ile Ser Met Thr
450 455 460

Phe Ile Ser Leu Ser Lys Ala Met Thr Ile Gly Gly Ala Phe Phe Leu
465 470 475 480

Phe Ala Gly Ile Ala Ser Phe Ala Trp Val Phe Phe Phe Ala Tyr Leu
485 490 495

Pro Glu Thr Arg Gly Arg Thr Leu Glu Asp Met Ser Ser Leu Phe Gly
500 505 510

Asn Thr Ala Thr His Lys Gln Gly Ala Ala Glu Ala Asp Asp Asp Ala
515 520 525

Gly Glu Lys Lys Val Glu Met Ala Ala Thr Asn
530 535

<210> 27
<211> 1872
<212> DNA
<213> Triticum aestivum

<400> 27
gcacgagctc atcactaggc tgtcagtcgt tctgtttcaac gaacgatcag ttcgctcctaa 60
gcagatgaaa atgtctccgg aaagaaaagg agcggaggac aaggaagaag gatcgaggat 120
ggcttctgct gcgctcccgg agccggggggc agtccatcca aggaacaagg gcaatttcaa 180
gtacgccttc acctgcgcc tctgtgcttc catggccacc atcgctcctcg gctacgacgt 240
tggggtgatg agcgggtgct cgctgtacat caagagggac ctgcagatca cggacgtgca 300
gctggagatc atgatgggca tcctgagcgt gtacgcgctc atcgggtcct tcctcggcgc 360
gaggacgtcc gactgggtcg gccgccgcgt caccgtcgctc ttgcgcggccg ccattcttcaa 420
caacggctcc ttgctcatgg gcttcgcggt caactacgcc atgctcatgg tcgggcgctt 480
cgtcaccgga atcggcgtgg gctacgccat catggtcgcg ccagtgtaca cgcccagggt 540
gtccccggcg tcggcccgcg gcttctcacc gtctttcacc gaggtgttca tcaatgtggg 600
cactctcctt ggctacgtct ccaactacgc cttegcgcgc ctcccgtcc acctcagctg 660
gcgcgtcatg ctgcgcatcg gcgcggtccc gtccgccctg cttgcgctca tgggtgtcgg 720
catgccggag tctcctcgct ggctcgatc gaaaggccgc ctgcgcggac ccagggccgt 780
tctggccaag acctccgaca cgccggagga ggccgtggag cgccttgacc agatcaaggc 840
tgccgcggcg atccctaggg aacttgacgg cgacgtgggtc gtcatgccta agacaaaagg 900
cggccaggag aagcagggtg ggaaggagct catcttttcg ccgaccccag ccatgcggcg 960
catactgctc gcggcgctcg gcatccattt ctttcagcag gcgacgggct ccgactccgt 1020
cgtgctctat agcccacgcg tgttccagag cgcgggcata accggcgaca accacctgct 1080

eggcgccaca tgcgccatgg gggtcatgaa gacgctcttc atcctgggtgg ccacgttcca 1140
 gctcgaccgc gtcggcaggc ggccgctgct gctgaccagc acggccggca tgctcgctg 1200
 tctcatcggc ctccgggacgg gcctcaccgt cgtgggtcgg caccgggacg ccaaggtccc 1260
 gtggggccatc ggccctgtgca tcgtgtccat cttggcctac gtgtccttct tctccatcgg 1320
 cctcggggccc ctcaccagcg tgtacacctc ggaggtcttc ccactgcggg tgcgcgcgct 1380
 gggtcttcgcg ctgggcacgt catgcaaccg cgtcaccagc gccgcgggtct ccatgtcctt 1440
 cctgtccttg tccaaggcca tcaccatcgg cggcagcttc ttctgttacg ccggcatcgc 1500
 ggcgatagga tggattttct tcttcacctt cattccggag acgcgtggcc tgccgctcga 1560
 ggagataggg aagcttttctg gcatgacgga cacggccgctc gaagcccaag acaccgccac 1620
 gaaagacaag gcgaaagtag gggagatgaa ctagttagct agacgtcaac caactgttac 1680
 cgatgtacta ccatagagat gtatctgac aacgtggcaa tataagtgtc acggactctt 1740
 ggtgctcatt gatggattgt ttggataaaa tttcaagaga attgtttcaa gtttggatcc 1800
 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1860
 aaaaaaaaaa aa 1872

<210> 28
 <211> 529
 <212> PRT
 <213> Triticum aestivum

<400> 28
 Met Lys Met Ser Pro Glu Arg Lys Gly Ala Glu Asp Lys Glu Glu Gly
 1 5 10 15
 Ser Arg Met Ala Ser Ala Ala Leu Pro Glu Pro Gly Ala Val His Pro
 20 25 30
 Arg Asn Lys Gly Asn Phe Lys Tyr Ala Phe Thr Cys Ala Leu Cys Ala
 35 40 45
 Ser Met Ala Thr Ile Val Leu Gly Tyr Asp Val Gly Val Met Ser Gly
 50 55 60
 Ala Ser Leu Tyr Ile Lys Arg Asp Leu Gln Ile Thr Asp Val Gln Leu
 65 70 75 80
 Glu Ile Met Met Gly Ile Leu Ser Val Tyr Ala Leu Ile Gly Ser Phe
 85 90 95
 Leu Gly Ala Arg Thr Ser Asp Trp Val Gly Arg Arg Val Thr Val Val
 100 105 110
 Phe Ala Ala Ala Ile Phe Asn Asn Gly Ser Leu Leu Met Gly Phe Ala
 115 120 125
 Val Asn Tyr Ala Met Leu Met Val Gly Arg Phe Val Thr Gly Ile Gly
 130 135 140
 Val Gly Tyr Ala Ile Met Val Ala Pro Val Tyr Thr Pro Glu Val Ser
 145 150 155 160
 Pro Ala Ser Ala Arg Gly Phe Leu Thr Ser Phe Thr Glu Val Phe Ile
 165 170 175
 Asn Val Gly Ile Leu Leu Gly Tyr Val Ser Asn Tyr Ala Phe Ala Arg
 180 185 190
 Leu Pro Leu His Leu Ser Trp Arg Val Met Leu Gly Ile Gly Ala Val
 195 200 205

Pro Ser Ala Leu Leu Ala Leu Met Val Phe Gly Met Pro Glu Ser Pro
 210 215 220
 Arg Trp Leu Val Met Lys Gly Arg Leu Ala Asp Ala Arg Ala Val Leu
 225 230 235 240
 Ala Lys Thr Ser Asp Thr Pro Glu Glu Ala Val Glu Arg Leu Asp Gln
 245 250 255
 Ile Lys Ala Ala Ala Gly Ile Pro Arg Glu Leu Asp Gly Asp Val Val
 260 265 270
 Val Met Pro Lys Thr Lys Gly Gly Gln Glu Lys Gln Val Trp Lys Glu
 275 280 285
 Leu Ile Phe Ser Pro Thr Pro Ala Met Arg Arg Ile Leu Leu Ala Ala
 290 295 300
 Leu Gly Ile His Phe Phe Gln Gln Ala Thr Gly Ser Asp Ser Val Val
 305 310 315 320
 Leu Tyr Ser Pro Arg Val Phe Gln Ser Ala Gly Ile Thr Gly Asp Asn
 325 330 335
 His Leu Leu Gly Ala Thr Cys Ala Met Gly Val Met Lys Thr Leu Phe
 340 345 350
 Ile Leu Val Ala Thr Phe Gln Leu Asp Arg Val Gly Arg Arg Pro Leu
 355 360 365
 Leu Leu Thr Ser Thr Ala Gly Met Leu Ala Cys Leu Ile Gly Leu Gly
 370 375 380
 Thr Gly Leu Thr Val Val Gly Arg His Pro Asp Ala Lys Val Pro Trp
 385 390 395 400
 Ala Ile Gly Leu Cys Ile Val Ser Ile Leu Ala Tyr Val Ser Phe Phe
 405 410 415
 Ser Ile Gly Leu Gly Pro Leu Thr Ser Val Tyr Thr Ser Glu Val Phe
 420 425 430
 Pro Leu Arg Val Arg Ala Leu Gly Phe Ala Leu Gly Thr Ser Cys Asn
 435 440 445
 Arg Val Thr Ser Ala Ala Val Ser Met Ser Phe Leu Ser Leu Ser Lys
 450 455 460
 Ala Ile Thr Ile Gly Gly Ser Phe Phe Leu Tyr Ala Gly Ile Ala Ala
 465 470 475 480
 Ile Gly Trp Ile Phe Phe Phe Thr Phe Ile Pro Glu Thr Arg Gly Leu
 485 490 495
 Pro Leu Glu Glu Ile Gly Lys Leu Phe Gly Met Thr Asp Thr Ala Val
 500 505 510

Glu Ala Gln Asp Thr Ala Thr Lys Asp Lys Ala Lys Val Gly Glu Met
 515 520 525

Asn

<210> 29
 <211> 729
 <212> PRT
 <213> Arabidopsis thaliana

<400> 29
 Met Ser Gly Ala Val Leu Val Ala Ile Ala Ala Ala Val Gly Asn Leu
 1 5 10 15

Leu Gln Gly Trp Asp Asn Ala Thr Ile Ala Gly Ala Val Leu Tyr Ile
 20 25 30

Lys Lys Glu Phe Asn Leu Glu Ser Asn Pro Ser Val Glu Gly Leu Ile
 35 40 45

Val Ala Met Ser Leu Ile Gly Ala Thr Leu Ile Thr Thr Cys Ser Gly
 50 55 60

Gly Val Ala Asp Trp Leu Gly Arg Arg Pro Met Leu Ile Leu Ser Ser
 65 70 75 80

Ile Leu Tyr Phe Val Gly Ser Leu Val Met Leu Trp Ser Pro Asn Val
 85 90 95

Tyr Val Leu Leu Leu Gly Arg Leu Leu Asp Gly Phe Gly Val Gly Leu
 100 105 110

Val Val Thr Leu Val Pro Ile Tyr Ile Ser Glu Thr Ala Pro Pro Glu
 115 120 125

Ile Arg Gly Leu Leu Asn Thr Leu Pro Gln Phe Thr Gly Ser Gly Gly
 130 135 140

Met Phe Leu Ser Tyr Cys Met Val Phe Gly Met Ser Leu Met Pro Ser
 145 150 155 160

Pro Ser Trp Arg Leu Met Leu Gly Val Leu Phe Ile Pro Ser Leu Val
 165 170 175

Phe Phe Phe Leu Thr Val Phe Phe Leu Pro Glu Ser Pro Arg Trp Leu
 180 185 190

Val Ser Lys Gly Arg Met Leu Glu Ala Lys Arg Val Leu Gln Arg Leu
 195 200 205

Arg Gly Arg Glu Asp Val Ser Gly Glu Met Ala Leu Leu Val Glu Gly
 210 215 220

Leu Gly Ile Gly Gly Glu Thr Thr Ile Glu Glu Tyr Ile Ile Gly Pro
 225 230 235 240

Ala Asp Glu Val Thr Asp Asp His Asp Ile Ala Val Asp Lys Asp Gln
 245 250 255

Ile Lys Leu Tyr Gly Ala Glu Glu Gly Leu Ser Trp Val Ala Arg Pro
 260 265 270
 Val Lys Gly Gly Ser Thr Met Ser Val Leu Ser Arg His Gly Ser Thr
 275 280 285
 Met Ser Arg Arg Gln Gly Ser Leu Ile Asp Pro Leu Val Thr Leu Phe
 290 295 300
 Gly Ser Val His Glu Lys Met Pro Asp Thr Gly Ser Met Arg Ser Ala
 305 310 315 320
 Leu Phe Pro His Phe Gly Ser Met Phe Ser Val Gly Gly Asn Gln Pro
 325 330 335
 Arg His Glu Asp Trp Asp Glu Glu Asn Leu Val Gly Glu Gly Glu Asp
 340 345 350
 Tyr Pro Ser Asp His Gly Asp Asp Ser Glu Asp Asp Leu His Ser Pro
 355 360 365
 Leu Ile Ser Arg Gln Thr Thr Ser Met Glu Lys Asp Met Pro His Thr
 370 375 380
 Ala His Gly Thr Leu Ser Thr Phe Arg His Gly Ser Gln Val Gln Gly
 385 390 395 400
 Ala Gln Gly Glu Gly Ala Gly Ser Met Gly Ile Gly Gly Gly Trp Gln
 405 410 415
 Val Ala Trp Lys Trp Thr Glu Arg Glu Asp Glu Ser Gly Gln Lys Glu
 420 425 430
 Glu Gly Phe Pro Gly Ser Arg Arg Gly Ser Ile Val Ser Leu Pro Gly
 435 440 445
 Gly Asp Gly Thr Gly Glu Ala Asp Phe Val Gln Ala Ser Ala Leu Val
 450 455 460
 Ser Gln Pro Ala Leu Tyr Ser Lys Asp Leu Leu Lys Glu His Thr Ile
 465 470 475 480
 Gly Pro Ala Met Val His Pro Ser Glu Thr Thr Lys Gly Ser Ile Trp
 485 490 495
 His Asp Leu His Asp Pro Gly Val Lys Arg Ala Leu Val Val Gly Val
 500 505 510
 Gly Leu Gln Ile Leu Gln Gln Phe Ser Gly Ile Asn Gly Val Leu Tyr
 515 520 525
 Tyr Thr Pro Gln Ile Leu Glu Gln Ala Gly Val Gly Ile Leu Leu Ser
 530 535 540
 Asn Met Gly Ile Ser Ser Ser Ser Ala Ser Leu Leu Ile Ser Ala Leu
 545 550 555 560
 Thr Thr Phe Val Met Leu Pro Ala Ile Ala Val Ala Met Arg Leu Met
 565 570 575

Asp Leu Ser Gly Arg Arg Thr Leu Leu Leu Thr Thr Ile Pro Ile Leu
 580 585 590
 Ile Ala Ser Leu Leu Val Leu Val Ile Ser Asn Leu Val His Met Asn
 595 600 605
 Ser Ile Val His Ala Val Leu Ser Thr Val Ser Val Val Leu Tyr Phe
 610 615 620
 Cys Phe Phe Val Met Gly Phe Gly Pro Ala Pro Asn Ile Leu Cys Ser
 625 630 635 640
 Glu Ile Phe Pro Thr Arg Val Arg Gly Ile Cys Ile Ala Ile Cys Ala
 645 650 655
 Leu Thr Phe Trp Ile Cys Asp Ile Ile Val Thr Tyr Ser Leu Pro Val
 660 665 670
 Leu Leu Lys Ser Ile Gly Leu Ala Gly Val Phe Gly Met Tyr Ala Ile
 675 680 685
 Val Cys Cys Ile Ser Trp Val Phe Val Phe Ile Lys Val Pro Glu Thr
 690 695 700
 Lys Gly Met Pro Leu Glu Val Ile Thr Glu Phe Phe Ser Val Gly Ala
 705 710 715 720
 Arg Gln Ala Glu Ala Ala Lys Asn Glu
 725
 <210> 30
 <211> 549
 <212> PRT
 <213> Beta vulgaris
 <400> 30
 Met Ser Glu Gly Thr Asn Lys Ala Met Ser Asp Pro Pro Pro Thr Thr
 1 5 10 15
 Ala Ser Lys Val Ile Ala Asp Phe Asp Pro Leu Lys Lys Pro Pro Lys
 20 25 30
 Arg Asn Lys Phe Ala Phe Ala Cys Ala Thr Leu Ala Ser Met Thr Ser
 35 40 45
 Val Leu Leu Gly Tyr Asp Ile Gly Val Met Ser Gly Ala Ile Ile Tyr
 50 55 60
 Leu Lys Glu Asp Trp His Ile Ser Asp Thr Gln Ile Gly Val Leu Val
 65 70 75 80
 Gly Ile Leu Asn Ile Tyr Cys Leu Phe Gly Ser Phe Ala Ala Gly Arg
 85 90 95
 Thr Ser Asp Trp Ile Gly Arg Arg Tyr Thr Ile Val Leu Ala Gly Ala
 100 105 110
 Ile Phe Phe Val Gly Ala Leu Leu Met Gly Phe Ala Thr Asn Tyr Ala
 115 120 125

Phe	Leu	Met	Val	Gly	Arg	Phe	Val	Thr	Gly	Ile	Gly	Val	Gly	Tyr	Ala		
130						135					140						
Leu	Met	Ile	Ala	Pro	Val	Tyr	Thr	Ala	Glu	Val	Ser	Pro	Ala	Ser	Ser		
145					150					155					160		
Arg	Gly	Phe	Leu	Thr	Ser	Phe	Pro	Glu	Val	Phe	Ile	Asn	Ala	Gly	Ile		
				165					170					175			
Leu	Leu	Gly	Tyr	Ile	Ser	Asn	Leu	Ala	Phe	Ser	Ser	Leu	Pro	Thr	His		
			180					185					190				
Leu	Ser	Trp	Arg	Phe	Met	Leu	Gly	Ile	Gly	Ala	Ile	Pro	Ser	Ile	Phe		
		195					200					205					
Leu	Ala	Ile	Gly	Val	Leu	Ala	Met	Pro	Glu	Ser	Pro	Arg	Trp	Leu	Val		
	210					215					220						
Met	Gln	Gly	Arg	Leu	Gly	Asp	Ala	Lys	Lys	Val	Leu	Asn	Arg	Ile	Ser		
225					230					235					240		
Asp	Ser	Pro	Glu	Glu	Ala	Gln	Leu	Arg	Leu	Ser	Glu	Ile	Lys	Gln	Thr		
				245					250					255			
Ala	Gly	Ile	Pro	Ala	Glu	Cys	Asp	Glu	Asp	Ile	Tyr	Lys	Val	Glu	Lys		
			260					265					270				
Thr	Lys	Ile	Lys	Ser	Gly	Asn	Ala	Val	Trp	Lys	Glu	Leu	Phe	Phe	Asn		
		275					280					285					
Pro	Thr	Pro	Ala	Val	Arg	Arg	Ala	Val	Ile	Ala	Gly	Ile	Gly	Ile	His		
	290					295					300						
Phe	Phe	Gln	Gln	Ala	Ser	Gly	Ile	Asp	Ala	Val	Val	Leu	Tyr	Ser	Pro		
305					310					315					320		
Arg	Ile	Phe	Gln	Ser	Ala	Gly	Ile	Thr	Asn	Ala	Arg	Lys	Gln	Leu	Leu		
				325					330					335			
Ala	Thr	Val	Ala	Val	Gly	Val	Val	Lys	Thr	Leu	Phe	Ile	Leu	Val	Ala		
			340					345					350				
Thr	Phe	Gln	Leu	Asp	Lys	Tyr	Gly	Arg	Arg	Pro	Leu	Leu	Leu	Thr	Ser		
		355					360					365					
Val	Gly	Gly	Met	Ile	Ile	Ala	Ile	Leu	Thr	Leu	Ala	Met	Ser	Leu	Thr		
	370					375					380						
Val	Ile	Asp	His	Ser	His	His	Lys	Ile	Thr	Trp	Ala	Ile	Ala	Leu	Cys		
385					390					395					400		
Ile	Thr	Met	Val	Cys	Ala	Val	Val	Ala	Ser	Phe	Ser	Ile	Gly	Leu	Gly		
				405					410					415			
Pro	Ile	Thr	Trp	Val	Tyr	Ser	Ser	Glu	Val	Phe	Pro	Leu	Arg	Leu	Arg		
			420					425					430				
Ala	Gln	Gly	Thr	Ser	Met	Gly	Val	Ala	Val	Asn	Arg	Val	Val	Ser	Gly		
		435					440					445					

Val Ile Ser Ile Phe Phe Leu Pro Leu Ser His Lys Ile Thr Thr Gly
 450 455 460

Gly Ala Phe Phe Leu Phe Gly Gly Ile Ala Ile Ile Ala Trp Phe Phe
 465 470 475 480

Phe Leu Thr Phe Leu Pro Glu Thr Arg Gly Arg Thr Leu Glu Asn Met
 485 490 495

His Glu Leu Phe Glu Asp Phe Arg Trp Arg Glu Ser Phe Pro Gly Asn
 500 505 510

Lys Ser Asn Asn Asp Glu Asn Ser Thr Arg Lys Gln Ser Asn Gly Asn
 515 520 525

Asp Lys Ser Gln Val Gln Leu Gly Glu Thr Thr Thr Ser Thr Thr Val
 530 535 540

Thr Asn Asp Asn His
 545

<210> 31
 <211> 2777
 <212> DNA
 <213> Zea mays

<400> 31
 cacgggggtta gattcgggagc ggctcttggc ttgcagtcca aacgcccttc acccctgatac 60
 tggaccggag ggagcggctc cttccgtcag ttgttcttgc tttgcctggg cctcttccgc 120
 ctgcttcgtg ttcttcacag gagccggtga cctcggacga tatcttggag gacaagatgt 180
 cgggggctgt tcttgtcgcc atagtcgcct ccatcggcaa tctattgcag ggggtgggaca 240
 atgccaccat cgcagctgct gttctgtata taaagaagga atttcaattg caaaatgagc 300
 ccactgtgga gggactaatt gtgtcaatgt cacttatcgg cgccaccatc gttactacat 360
 tctccgggcc attatcagac tcgattggcc gagccctat gcttattctc tcttcaattc 420
 tgtacttctt cagcggcctc atcatgctat ggtctcctaa tgtctatgtc ctgctgttg 480
 cacgcttcgt agatggattt ggtattggct tggctgtcac gcttgtgcct ttgtacattt 540
 cagaaatagc cccttcggag attagaggtt tgcgtgaatac actaccacaa ttcagtggat 600
 caggaggaat gttcttgcata tactgcatgg tgtttgggat gtccctgtcg ccatcaccgc 660
 attggagaat tatgcttggg gtgctcgcga taccttcatt gttcttcttt ggtttgacaa 720
 tattttatct tctgaatct ccaagatggc tcgttagcaa aggtcggatg gcagaggcaa 780
 aaaaggtgtt gcaaaagtta cgggggaaag acgatgtctc aggtgaattg tcccttcttc 840
 tcgaagggtt ggaggttgga ggagacactt ccattgaaga gtacatcatt ggacctgcca 900
 ccgaggcagc ccatgatctt gttactgacg gtgataagga acaaatacaca ctttatgggc 960
 ctgaagaagg ccagtcattg attgctcgcg cttctaaggg acccatcatg cttggaagtg 1020
 tgctttctct tgcattctct catgggagca tgggtgaacca gagggtaccc cttatggatc 1080
 cgattgtgac acttttttgt agtgtccatg agaataatgcc tcaagctgga ggaagtatga 1140
 ggagcacatt gtttccaaac tttggaagta tgttcagtgt cacagatcag catgccaaaa 1200
 atgagcagtg ggtgaagag aatcttcata gggatgacga ggagtagcga tctgatgggtg 1260
 caggaggtga ctatgaggac aatctccata gccattgct gtccaggcag gcaacagggtg 1320
 cggaaggga ggacattgtg caccatgggt accgtggaag tgctttgagc atgagaaggc 1380
 aaaccctctt aggggaggtt ggagatgggt tgagcagcac tgatatcggg gggggatggc 1440
 agcttgcttg gaaatggtca gagaaggaag gtgagaatgg tagaaaggaa ggtggtttca 1500
 aaagagtcta cttgcaccaa gagggaggtt ctgggtcaag aaggggctca attgtttcac 1560
 ttcccgggtg tggcgatgtt tttgagggtg gtgagtttgt acatgctgct gctttagtaa 1620
 gtcagtcagc acttttctca aagggtcttg ctgaaccacg catgtcagat gctgccatgg 1680
 ttcacccatc tgaggtagct gccaaagggt caggttggaa agatttgttt gaacctggag 1740
 tgaggcgtgc cctgttagtc ggtgttgga ttcagatcct tcaacagttt gctggaataa 1800
 acggtgttct gtactatacc ccacaaattc ttgagcaagc tgggtgtggca gttattcttt 1860
 ccaaatttgg tctcagctcg gcatcagcat ccatcttgat cagttctctc actaccttac 1920

taatgcttcc ttgcattggc tttgccatgc tgcttatgga tctttccgga agaagggttt 1980
 tgctgctagg cacaattcca atcttgatag catctctagt tatcctgggt gtgtccaatc 2040
 taattgattt gggtagacta gcccatgctt tgctctccac cgtcagtgtt atcgtctact 2100
 tctgctgctt cgttatggga tttgggtcca tccccaacat tttatgtgca gagatctttc 2160
 caaccagggt tcgtggcctc tgtattgcc aattgtgcctt tacattctgg atcggagata 2220
 tcatcgtcac ctacagcctt cctgtgatgc tgaatgctat tggactggcg ggtgttttca 2280
 gcataatagc agtcgtatgc ttgatttctt ttgtgttcgt cticcttaag gtccctgaga 2340
 caaaggggat gccccttgag gttattaccg aattctttgc agttggtgcg aagcaagcgg 2400
 ctgcaaaagc ctaatttctt tggtagcctt gtgtgcaact attgcactgt aagttagaaa 2460
 cttgaagggg tttcaccaag aagctcggag aattactttg gatttggtga aatgttaagg 2520
 gaacgaacat ctgctcatgc tcctcaaagc gtaaaaaaga gtccctcaat ggcaaatagg 2580
 agtcgttaag ttgtcaatgt catttaccat atgttttacc tatttgtagt gtattataag 2640
 tcaagctatt caacgctggg ttgtgctaga aatctttaga acaaagatga taatgatctg 2700
 atctgatgtt ataattattca aatctcaaat aaagaaaata tcgtttctca aaaaaaaaaa 2760
 aaaaaaaaaa aaaaaaa 2777

<210> 32
 <211> 800
 <212> PRT
 <213> Zea mays

<400> 32
 Ile Arg Ser Gly Ser Trp Leu Ala Val Gln Thr Pro Phe Thr Pro Asp
 1 5 10 15
 Leu Asp Arg Arg Glu Arg Leu Leu Pro Ser Val Val Leu Ala Leu Pro
 20 25 30
 Gly Pro Leu Pro Pro Ala Ser Cys Ser Ser Gln Glu Pro Val Thr Ser
 35 40 45
 Asp Asp Ile Leu Glu Asp Lys Met Ser Gly Ala Val Leu Val Ala Ile
 50 55 60
 Val Ala Ser Ile Gly Asn Leu Leu Gln Gly Trp Asp Asn Ala Thr Ile
 65 70 75 80
 Ala Ala Ala Val Leu Tyr Ile Lys Lys Glu Phe Gln Leu Gln Asn Glu
 85 90 95
 Pro Thr Val Glu Gly Leu Ile Val Ser Met Ser Leu Ile Gly Ala Thr
 100 105 110
 Ile Val Thr Thr Phe Ser Gly Pro Leu Ser Asp Ser Ile Gly Arg Arg
 115 120 125
 Pro Met Leu Ile Leu Ser Ser Ile Leu Tyr Phe Phe Ser Gly Leu Ile
 130 135 140
 Met Leu Trp Ser Pro Asn Val Tyr Val Leu Leu Leu Ala Arg Phe Val
 145 150 155 160
 Asp Gly Phe Gly Ile Gly Leu Ala Val Thr Leu Val Pro Leu Tyr Ile
 165 170 175
 Ser Glu Ile Ala Pro Ser Glu Ile Arg Gly Leu Leu Asn Thr Leu Pro
 180 185 190

Gln	Phe	Ser	Gly	Ser	Gly	Gly	Met	Phe	Leu	Ser	Tyr	Cys	Met	Val	Phe		
		195					200					205					
Gly	Met	Ser	Leu	Ser	Pro	Ser	Pro	Asp	Trp	Arg	Ile	Met	Leu	Gly	Val		
	210					215					220						
Leu	Ala	Ile	Pro	Ser	Leu	Phe	Phe	Phe	Gly	Leu	Thr	Ile	Phe	Tyr	Leu		
225					230					235					240		
Pro	Glu	Ser	Pro	Arg	Trp	Leu	Val	Ser	Lys	Gly	Arg	Met	Ala	Glu	Ala		
				245					250					255			
Lys	Lys	Val	Leu	Gln	Lys	Leu	Arg	Gly	Lys	Asp	Asp	Val	Ser	Gly	Glu		
		260						265					270				
Leu	Ser	Leu	Leu	Leu	Glu	Gly	Leu	Glu	Val	Gly	Gly	Asp	Thr	Ser	Ile		
	275						280					285					
Glu	Glu	Tyr	Ile	Ile	Gly	Pro	Ala	Thr	Glu	Ala	Ala	Asp	Asp	Leu	Val		
	290					295					300						
Thr	Asp	Gly	Asp	Lys	Glu	Gln	Ile	Thr	Leu	Tyr	Gly	Pro	Glu	Glu	Gly		
305					310					315					320		
Gln	Ser	Trp	Ile	Ala	Arg	Pro	Ser	Lys	Gly	Pro	Ile	Met	Leu	Gly	Ser		
				325					330					335			
Val	Leu	Ser	Leu	Ala	Ser	Arg	His	Gly	Ser	Met	Val	Asn	Gln	Ser	Val		
			340					345					350				
Pro	Leu	Met	Asp	Pro	Ile	Val	Thr	Leu	Phe	Gly	Ser	Val	His	Glu	Asn		
		355					360					365					
Met	Pro	Gln	Ala	Gly	Gly	Ser	Met	Arg	Ser	Thr	Leu	Phe	Pro	Asn	Phe		
	370					375					380						
Gly	Ser	Met	Phe	Ser	Val	Thr	Asp	Gln	His	Ala	Lys	Asn	Glu	Gln	Trp		
385					390					395					400		
Asp	Glu	Glu	Asn	Leu	His	Arg	Asp	Asp	Glu	Glu	Tyr	Ala	Ser	Asp	Gly		
			405						410					415			
Ala	Gly	Gly	Asp	Tyr	Glu	Asp	Asn	Leu	His	Ser	Pro	Leu	Leu	Ser	Arg		
			420					425					430				
Gln	Ala	Thr	Gly	Ala	Glu	Gly	Lys	Asp	Ile	Val	His	His	Gly	His	Arg		
	435						440					445					
Gly	Ser	Ala	Leu	Ser	Met	Arg	Arg	Gln	Thr	Leu	Leu	Gly	Glu	Gly	Gly		
	450					455					460						
Asp	Gly	Val	Ser	Ser	Thr	Asp	Ile	Gly	Gly	Gly	Trp	Gln	Leu	Ala	Trp		
465					470					475					480		
Lys	Trp	Ser	Glu	Lys	Glu	Gly	Glu	Asn	Gly	Arg	Lys	Glu	Gly	Gly	Phe		
				485					490					495			
Lys	Arg	Val	Tyr	Leu	His	Gln	Glu	Gly	Val	Pro	Gly	Ser	Arg	Arg	Gly		
		500						505					510				

Ser Ile Val Ser Leu Pro Gly Gly Gly Asp Val Phe Glu Gly Ser Glu
 515 520 525
 Phe Val His Ala Ala Ala Leu Val Ser Gln Ser Ala Leu Phe Ser Lys
 530 535 540
 Gly Leu Ala Glu Pro Arg Met Ser Asp Ala Ala Met Val His Pro Ser
 545 550 555 560
 Glu Val Ala Ala Lys Gly Ser Arg Trp Lys Asp Leu Phe Glu Pro Gly
 565 570 575
 Val Arg Arg Ala Leu Leu Val Gly Val Gly Ile Gln Ile Leu Gln Gln
 580 585 590
 Phe Ala Gly Ile Asn Gly Val Leu Tyr Tyr Thr Pro Gln Ile Leu Glu
 595 600 605
 Gln Ala Gly Val Ala Val Ile Leu Ser Lys Phe Gly Leu Ser Ser Ala
 610 615 620
 Ser Ala Ser Ile Leu Ile Ser Ser Leu Thr Thr Leu Leu Met Leu Pro
 625 630 635 640
 Cys Ile Gly Phe Ala Met Leu Leu Met Asp Leu Ser Gly Arg Arg Phe
 645 650 655
 Leu Leu Leu Gly Thr Ile Pro Ile Leu Ile Ala Ser Leu Val Ile Leu
 660 665 670
 Val Val Ser Asn Leu Ile Asp Leu Gly Thr Leu Ala His Ala Leu Leu
 675 680 685
 Ser Thr Val Ser Val Ile Val Tyr Phe Cys Cys Phe Val Met Gly Phe
 690 695 700
 Gly Pro Ile Pro Asn Ile Leu Cys Ala Glu Ile Phe Pro Thr Arg Val
 705 710 715 720
 Arg Gly Leu Cys Ile Ala Ile Cys Ala Phe Thr Phe Trp Ile Gly Asp
 725 730 735
 Ile Ile Val Thr Tyr Ser Leu Pro Val Met Leu Asn Ala Ile Gly Leu
 740 745 750
 Ala Gly Val Phe Ser Ile Tyr Ala Val Val Cys Leu Ile Ser Phe Val
 755 760 765
 Phe Val Phe Leu Lys Val Pro Glu Thr Lys Gly Met Pro Leu Glu Val
 770 775 780
 Ile Thr Glu Phe Phe Ala Val Gly Ala Lys Gln Ala Ala Ala Lys Ala
 785 790 795 800

<210> 33
 <211> 2063
 <212> DNA
 <213> Zea mays

<400> 33

```

gtgttgtaag cctactaaaa tttgctgtta ttgatttttg gaccctttca tttcatcagg 60
tgcaocgcgtc gatgtcgttg ccagcacgga acaatcacca ccgttattaa gaagatgatg 120
cgctgcgcgtc caacggggcgg cgggtgcgtc gcttcgtgga gggcgatcg gagattgccg 180
gcggtcaacc cctgcagcgt gcggtgccc acgggcaacg atgggtggtg cgcgggcctg 240
aggctcgggg cggcgatct cgccggcctc gagatggcca acctgcgcgg cggcgtcggg 300
gggctcttcc gcgcgagccc gcgctacggg cgcttgcaag ccacggcggc agttgacct 360
gaagatattc cattggagaa ggttcaagtt aaatcctcag gacatgttct gccatatgtt 420
ggcgttgctt gtttgggggc tattctgttt ggttaccatc ttggtgtggt caatggcgca 480
ottgaatata tcgcgaagga tcttgggatt gctgaaaatg ctgtcttgca ggggtgggtg 540
gttagcacat ccttggcttg tgcaacacta ggttctttta ctgggggttc tttggcagat 600
aaatttgggc ggacaagaac attcatcctg gatgcagtc cacttgctct aggtgcattc 660
ttgagtgcaa cagctcaaga tatccgcaca atgattattg gccgattgct tgctggaatt 720
ggtatcgggg tctcatctgc tcttgtaacc ctttacatat ctgagatctc accaactgaa 780
attcgtggaa cacttggtac cgtaaatcaa ctttttattt gcattggaat tcttgagct 840
ttgttagctg gattgcctct ggcaggaaat cctgcctggt ggaggacaat gtttgggaatt 900
gctgtagttc catccattct gctggctgta ggaatggcct tttcgctga aagccctcgt 960
tggtatttcc agcaaggaaa ggttactcaa gcagaattag ctgtaaaaag actgtatgga 1020
aaagaaatgg ttaccgaaat tatgtttgat ctgagagcta gtggccaaag ttcttcggag 1080
tccgaagccg gctggtttga tcttttcagc aagcgttact ggaaagtgtg gagtgtgggg 1140
gcagcactgt ttttgttcca gcagcttgct ggtataaacg ctgttgtata ttactctaca 1200
tcggtgttcc gtagtgaggg cattgcatct gatgttgctg ctagtgtctt tgttgagca 1260
gccaatgttt ttggtactat ggttgcatct totctaattg acaaacaagg aaggaaaagc 1320
cttctgataa caagcttttc tggaatgggt gcttcaatgc tactcctagc attgtccttc 1380
acctggaaag ctctggcacc ttattctggt actcttgctg ttgttggcac tgttctgtac 1440
gtgctgtcat ttgctctagg agcggggcct gttccagcgc tacttcttcc tgaaatattt 1500
gcctcgagaa taaggggccaa ggctgtcgca ttatctctag gcactgactg ggtatctaac 1560
tttttcattg gcctgtactt cctgagtgtc gtgagcaagt ttgggatcag caacgtgtat 1620
ctgggatttg catcagtatg tgcccttgca gttctgtaca tagctgggaa tgtggtcgag 1680
accaagggga gatcacttga agagattgaa agggagctaa gtgtagcaga atgatgtact 1740
tttgctagtc atgctgtggc gccgttttgg ttatcgagaa tgcaaccaag cgctcaaccg 1800
agcatccttg gacctggaga ctctttctag tttcatgtag ttttagaaat aagcgaacgg 1860
caagagtacc aatcttaggt gacttgggtg gggttgtgtc tgaaataagt gaattggatt 1920
gtagaatttc agaaataagt gaattggatt gtagaatttc aaaaagtgtg ttccccttaa 1980
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 2040
aaaaaaaaaa aaaaaaaaaa aaa 2063

```

<210> 34

<211> 571

<212> PRT

<213> Zea mays

<400> 34

```

Asn Leu Leu Leu Leu Ile Phe Gly Pro Phe His Phe Ile Arg Cys Thr
 1             5             10             15

Arg Arg Cys Arg Cys Gln His Gly Thr Ile Thr Thr Val Ile Lys Lys
      20             25             30

Met Met Arg Cys Ala Ala Thr Gly Gly Gly Cys Val Ala Ser Trp Ser
      35             40             45

Gly Asp Arg Arg Leu Pro Ala Val Asn Pro Cys Ser Val Arg Met Pro
      50             55             60

Thr Gly Asn Asp Gly Trp Cys Ala Gly Leu Arg Ser Arg Ala Ala Asp
      65             70             75             80

```


Leu Ala Gly Leu Glu Met Ala Asn Leu Arg Gly Gly Val Gly Gly Leu
 85 90 95
 Phe Arg Ala Ser Pro Arg Tyr Gly Arg Leu Gln Ala Thr Ala Ala Val
 100 105 110
 Asp Pro Glu Asp Ile Pro Leu Glu Lys Val Gln Val Lys Ser Ser Gly
 115 120 125
 His Val Leu Pro Tyr Val Gly Val Ala Cys Leu Gly Ala Ile Leu Phe
 130 135 140
 Gly Tyr His Leu Gly Val Val Asn Gly Ala Leu Glu Tyr Leu Ala Lys
 145 150 155 160
 Asp Leu Gly Ile Ala Glu Asn Ala Val Leu Gln Gly Trp Val Val Ser
 165 170 175
 Thr Ser Leu Ala Gly Ala Thr Leu Gly Ser Phe Thr Gly Gly Ser Leu
 180 185 190
 Ala Asp Lys Phe Gly Arg Thr Arg Thr Phe Ile Leu Asp Ala Val Pro
 195 200 205
 Leu Ala Leu Gly Ala Phe Leu Ser Ala Thr Ala Gln Asp Ile Arg Thr
 210 215 220
 Met Ile Ile Gly Arg Leu Leu Ala Gly Ile Gly Ile Gly Val Ser Ser
 225 230 235 240
 Ala Leu Val Pro Leu Tyr Ile Ser Glu Ile Ser Pro Thr Glu Ile Arg
 245 250 255
 Gly Thr Leu Gly Thr Val Asn Gln Leu Phe Ile Cys Ile Gly Ile Leu
 260 265 270
 Ala Ala Leu Leu Ala Gly Leu Pro Leu Ala Gly Asn Pro Ala Trp Trp
 275 280 285
 Arg Thr Met Phe Gly Ile Ala Val Val Pro Ser Ile Leu Leu Ala Val
 290 295 300
 Gly Met Ala Phe Ser Pro Glu Ser Pro Arg Trp Leu Phe Gln Gln Gly
 305 310 315 320
 Lys Val Thr Gln Ala Glu Leu Ala Val Lys Arg Leu Tyr Gly Lys Glu
 325 330 335
 Met Val Thr Glu Ile Met Phe Asp Leu Arg Ala Ser Gly Gln Ser Ser
 340 345 350
 Ser Glu Ser Glu Ala Gly Trp Phe Asp Leu Phe Ser Lys Arg Tyr Trp
 355 360 365
 Lys Val Val Ser Val Gly Ala Ala Leu Phe Leu Phe Gln Gln Leu Ala
 370 375 380
 Gly Ile Asn Ala Val Val Tyr Tyr Ser Thr Ser Val Phe Arg Ser Ala
 385 390 395 400

Gly Ile Ala Ser Asp Val Ala Ala Ser Ala Leu Val Gly Ala Ala Asn
405 410 415

Val Phe Gly Thr Met Val Ala Ser Ser Leu Met Asp Lys Gln Gly Arg
420 425 430

Lys Ser Leu Leu Ile Thr Ser Phe Ser Gly Met Gly Ala Ser Met Leu
435 440 445

Leu Leu Ala Leu Ser Phe Thr Trp Lys Ala Leu Ala Pro Tyr Ser Gly
450 455 460

Thr Leu Ala Val Val Gly Thr Val Leu Tyr Val Leu Ser Phe Ala Leu
465 470 475 480

Gly Ala Gly Pro Val Pro Ala Leu Leu Leu Pro Glu Ile Phe Ala Ser
485 490 495

Arg Ile Arg Ala Lys Ala Val Ala Leu Ser Leu Gly Met His Trp Val
500 505 510

Ser Asn Phe Phe Ile Gly Leu Tyr Phe Leu Ser Val Val Ser Lys Phe
515 520 525

Gly Ile Ser Asn Val Tyr Leu Gly Phe Ala Ser Val Cys Ala Leu Ala
530 535 540

Val Leu Tyr Ile Ala Gly Asn Val Val Glu Thr Lys Gly Arg Ser Leu
545 550 555 560

Glu Glu Ile Glu Arg Glu Leu Ser Val Ala Glu
565 570

<210> 35
<211> 1953
<212> DNA
<213> Zea mays

<220>
<221> unsure
<222> (1584)
<223> n = A, C, G or T

<400> 35
ccttcctcct cgtcctcctt caggccagcg ggcaagaaga agaagaagaa aaatcaaggc 60
ttgcggcgag aggctgtgcc cggccgaccg gcgagcgagc ttcgtagcgc cgtcatgggt 120
ggcggcgagca acagaggcgg cgccggcgcc ggcgaggaga gcggcagcga ccacgacggt 180
gtgctgcgga ggccgctgct caacacgggg agctgggtacc ggatgagctc gcggcagttc 240
agctttgccc cggggacetc ctccatggcc gtccctgcgc agtcccacgt ctccgccttc 300
ctctgcacgc tcatcgtcgc gtcgggcccc atccagttcg gcttcaccag cggcttctcc 360
tccccgaccc aggacgccat ggttcgggac ctcaacctct ctatctccga gttctcggcg 420
ttcggatcgc tgtccaacgt cggcggcatt gtcggggcga tcgccagcgg gcagatggcc 480
gagtagattg gccgtaaagg gtcgttgatg attgctgcaa tcccaaatat catcggttgg 540
cttgcatctt cctttgcaaa agatgcctca tttctatata tgggacgatt gcttgaaggg 600
tttggtgtcg gcatcatatc ctacacggta ccggtataca tagcagagat atctcctcag 660
aacatgaggg gagctcttgg ttctgtgaac cagttgtctg tgacctttgg catattcttg 720
gcctatttgc tcggcatgtt tattccttgg agacttcttg ctgtgattgg agccttgccc 780
tgacaaatgt tgattccttg actattcttc attccagaat ctcccagatg gctggcaaag 840
atgaatttga cggaagattg tgagacgtcc ctacaagtgc tgaggggggt tgagactgac 900

```

atcacaacag aagtgaatga tataaagagg gcagtggcat catcaagtaa gaggaccaca 960
atcagttttc aagaattaaa ccaaaagaaa taccgcacgc cactacttct agggattggc 1020
ctacttgtag tgcaaaatct tagtggaatc aacgggtgtac tgttttatgc aagtagcatc 1080
ttcaaagctg caggggttac aaacagcgac ttggccacct gttcacttgg tgctattcag 1140
gtccttgcta ctggagttac aacatggctg ttagaccgag ctggacgacg catccttctc 1200
attattttcta cctctggcat gactctatgc cttcttgccg tttctgttgt attttttctc 1260
aaggataaca ttacacagga ttctaactca tactacatct taacaatgat ctcccttggt 1320
ggtatttgtg cttttgtcat taccttctcg tttggtatgg gtgccattcc atggctcatg 1380
atgtctgaga tcctcccggt tagcatcaag agccttgccg gaagcatcgc aacactggcc 1440
aactggctga catccttcgc cataacaatg acgacgaact tgatgctcac gtggagtgtt 1500
ggaggcactt ttctctcgta catggttgtg agcgccctca ccatcgtttt tgttgctcct 1560
tggttgccgg agacgaaggg gagnaactct agaggagata caattttcgt ttcgctgagc 1620
attcagcgtc agctgcaatg gttgcccag tgtttatctt agggcctgtt tcgatcccat 1680
gagctaaagc aaaaagaagc taaaatttag tcactttata aactaaagtt ccaatcagga 1740
ggagctaaaa gtgaataaaa tagcaaaaga atatctttta gtcactttta gcttctaaag 1800
aggagctaga atttagtccc ttgttttagc ttatactcct tccatcctaa aaaaatatag 1860
gtctttctaa cttttctttt ttctgttcat attcattcga ataatagata atatagacat 1920
acgtataaac tattcattaa aaaaaaaaaa aaa 1953

```

```

<210> 36
<211> 553
<212> PRT
<213> Zea mays

```

```

<220>
<221> UNSURE
<222> (528)
<223> Xaa = ANY AMINO ACID

```

```

<400> 36
Pro Ser Ser Ser Ser Ser Phe Arg Pro Ala Gly Lys Lys Lys Lys Lys
 1             5             10             15

Lys Asn Gln Gly Leu Arg Arg Glu Ala Val Pro Gly Arg Pro Ala Ser
      20             25             30

Glu Leu Arg Thr Arg Val Met Gly Gly Gly Ser Asn Arg Gly Gly Ala
 35             40             45

Gly Ala Gly Glu Glu Ser Gly Ser Asp His Asp Gly Val Leu Arg Arg
 50             55             60

Pro Leu Leu Asn Thr Gly Ser Trp Tyr Arg Met Ser Ser Arg Gln Ser
 65             70             75             80

Ser Phe Ala Pro Gly Thr Ser Ser Met Ala Val Leu Arg Glu Ser His
      85             90             95

Val Ser Ala Phe Leu Cys Thr Leu Ile Val Ala Leu Gly Pro Ile Gln
      100            105            110

Phe Gly Phe Thr Ser Gly Phe Ser Ser Pro Thr Gln Asp Ala Met Val
      115            120            125

Arg Asp Leu Asn Leu Ser Ile Ser Glu Phe Ser Ala Phe Gly Ser Leu
      130            135            140

Ser Asn Val Gly Gly Met Val Gly Ala Ile Ala Ser Gly Gln Met Ala
      145            150            155            160

```

Glu	Tyr	Ile	Gly	Arg	Lys	Gly	Ser	Leu	Met	Ile	Ala	Ala	Ile	Pro	Asn	
				165					170					175		
Ile	Ile	Gly	Trp	Leu	Ala	Ile	Ser	Phe	Ala	Lys	Asp	Ala	Ser	Phe	Leu	
			180					185					190			
Tyr	Met	Gly	Arg	Leu	Leu	Glu	Gly	Phe	Gly	Val	Gly	Ile	Ile	Ser	Tyr	
		195					200					205				
Thr	Val	Pro	Val	Tyr	Ile	Ala	Glu	Ile	Ser	Pro	Gln	Asn	Met	Arg	Gly	
	210					215					220					
Ala	Leu	Gly	Ser	Val	Asn	Gln	Leu	Ser	Val	Thr	Phe	Gly	Ile	Phe	Leu	
225					230					235					240	
Ala	Tyr	Leu	Leu	Gly	Met	Phe	Ile	Pro	Trp	Arg	Leu	Leu	Ala	Val	Ile	
				245					250					255		
Gly	Ala	Leu	Pro	Cys	Thr	Met	Leu	Ile	Pro	Gly	Leu	Phe	Phe	Ile	Pro	
			260					265					270			
Glu	Ser	Pro	Arg	Trp	Leu	Ala	Lys	Met	Asn	Leu	Thr	Glu	Asp	Cys	Glu	
		275					280					285				
Thr	Ser	Leu	Gln	Val	Leu	Arg	Gly	Phe	Glu	Thr	Asp	Ile	Thr	Thr	Glu	
	290					295					300					
Val	Asn	Asp	Ile	Lys	Arg	Ala	Val	Ala	Ser	Ser	Ser	Lys	Arg	Thr	Thr	
305					310					315					320	
Ile	Ser	Phe	Gln	Glu	Leu	Asn	Gln	Lys	Lys	Tyr	Arg	Thr	Pro	Leu	Leu	
			325					330						335		
Leu	Gly	Ile	Gly	Leu	Leu	Val	Leu	Gln	Asn	Leu	Ser	Gly	Ile	Asn	Gly	
			340					345					350			
Val	Leu	Phe	Tyr	Ala	Ser	Ser	Ile	Phe	Lys	Ala	Ala	Gly	Val	Thr	Asn	
	355						360					365				
Ser	Asp	Leu	Ala	Thr	Cys	Ser	Leu	Gly	Ala	Ile	Gln	Val	Leu	Ala	Thr	
	370					375					380					
Gly	Val	Thr	Thr	Trp	Leu	Leu	Asp	Arg	Ala	Gly	Arg	Arg	Ile	Leu	Leu	
385					390					395					400	
Ile	Ile	Ser	Thr	Ser	Gly	Met	Thr	Leu	Cys	Leu	Leu	Ala	Val	Ser	Val	
				405					410					415		
Val	Phe	Phe	Leu	Lys	Asp	Asn	Ile	Ser	Gln	Asp	Ser	Asn	Ser	Tyr	Tyr	
			420					425					430			
Ile	Leu	Thr	Met	Ile	Ser	Leu	Val	Gly	Ile	Val	Ser	Phe	Val	Ile	Thr	
	435						440					445				
Phe	Ser	Phe	Gly	Met	Gly	Ala	Ile	Pro	Trp	Leu	Met	Met	Ser	Glu	Ile	
	450					455					460					
Leu	Pro	Val	Ser	Ile	Lys	Ser	Leu	Gly	Gly	Ser	Ile	Ala	Thr	Leu	Ala	
465					470					475					480	

Asn Trp Leu Thr Ser Phe Ala Ile Thr Met Thr Thr Asn Leu Met Leu
 485 490 495
 Thr Trp Ser Val Gly Gly Thr Phe Leu Ser Tyr Met Val Val Ser Ala
 500 505 510
 Phe Thr Ile Val Phe Val Val Leu Trp Val Pro Glu Thr Lys Gly Xaa
 515 520 525
 Asn Ser Arg Gly Asp Thr Ile Phe Val Ser Leu Ser Ile Gln Arg Gln
 530 535 540
 Leu Gln Trp Leu Pro Glu Cys Leu Ser
 545 550

<210> 37
 <211> 740
 <212> PRT
 <213> Oryza sativa

<400> 37
 Met Ala Gly Ala Val Leu Val Ala Ile Ala Ala Ser Ile Gly Asn Leu
 1 5 10 15
 Leu Gln Gly Trp Asp Asn Ala Thr Ile Ala Gly Ala Val Leu Tyr Ile
 20 25 30
 Lys Lys Glu Phe Asn Leu Gln Ser Glu Pro Leu Ile Glu Gly Leu Ile
 35 40 45
 Val Ala Met Ser Leu Ile Gly Ala Thr Ile Ile Thr Thr Phe Ser Gly
 50 55 60
 Ala Val Ala Asp Ser Phe Gly Arg Arg Pro Met Leu Ile Ala Ser Ala
 65 70 75 80
 Val Leu Tyr Phe Val Ser Gly Leu Val Met Leu Trp Ala Pro Asn Val
 85 90 95
 Tyr Val Leu Leu Leu Ala Arg Leu Ile Asp Gly Phe Gly Ile Gly Leu
 100 105 110
 Ala Val Thr Leu Val Pro Leu Tyr Ile Ser Glu Thr Ala Pro Thr Asp
 115 120 125
 Ile Arg Gly Leu Leu Asn Thr Leu Pro Gln Phe Ser Gly Ser Gly Gly
 130 135 140
 Met Phe Leu Ser Tyr Cys Met Val Phe Gly Met Ser Leu Met Pro Gln
 145 150 155 160
 Pro Asp Trp Arg Ile Met Leu Gly Val Leu Ser Ile Pro Ser Leu Ile
 165 170 175
 Tyr Phe Ala Leu Thr Ile Phe Tyr Leu Pro Glu Ser Pro Arg Trp Leu
 180 185 190

Val Ser Lys Gly Arg Met Ala Glu Ala Lys Arg Val Leu Gln Gly Leu
 195 200 205
 Arg Gly Arg Glu Asp Val Ser Gly Glu Met Ala Leu Leu Val Glu Gly
 210 215 220
 Leu Gly Val Gly Lys Asp Thr Lys Ile Glu Glu Tyr Ile Ile Gly Pro
 225 230 235 240
 Asp Asp Glu Leu Ala Asp Glu Gly Leu Ala Pro Asp Pro Glu Lys Ile
 245 250 255
 Lys Leu Tyr Gly Pro Glu Glu Gly Leu Ser Trp Val Ala Arg Pro Val
 260 265 270
 His Gly Gln Ser Ala Leu Gly Ser Ala Leu Gly Leu Ile Ser Arg His
 275 280 285
 Gly Ser Met Val Ser Gln Gly Lys Pro Leu Val Asp Pro Val Val Thr
 290 295 300
 Leu Phe Gly Ser Val His Glu Lys Met Pro Glu Ile Met Gly Ser Met
 305 310 315 320
 Arg Ser Thr Leu Phe Pro Asn Phe Gly Ser Met Phe Ser Val Ala Glu
 325 330 335
 Gln Gln Gln Ala Lys Gly Asp Trp Asp Ala Glu Ser Gln Arg Glu Gly
 340 345 350
 Glu Asp Tyr Gly Ser Asp His Gly Gly Asp Asp Ile Glu Asp Ser Leu
 355 360 365
 Gln Ser Pro Leu Ile Ser Arg Gln Ala Thr Ser Val Glu Gly Lys Glu
 370 375 380
 Ile Ala Ala Pro His Gly Ser Ile Met Gly Ala Val Gly Arg Ser Ser
 385 390 395 400
 Ser Leu Met Gln Gly Gly Glu Ala Val Ser Ser Met Gly Ile Gly Gly
 405 410 415
 Gly Trp Gln Leu Ala Trp Lys Trp Thr Glu Arg Glu Gly Ala Asp Gly
 420 425 430
 Glu Lys Glu Gly Gly Phe Gln Arg Ile Tyr Leu His Glu Glu Gly Val
 435 440 445
 Thr Gly Asp Arg Arg Gly Ser Ile Leu Ser Leu Pro Gly Gly Asp Val
 450 455 460
 Pro Pro Gly Gly Glu Phe Val Gln Ala Ala Ala Leu Val Ser Gln Pro
 465 470 475 480
 Ala Leu Tyr Ser Lys Glu Leu Met Glu Gln Arg Leu Ala Gly Pro Ala
 485 490 495
 Met Val His Pro Ser Gln Ala Val Ala Lys Gly Pro Lys Trp Ala Asp
 500 505 510

Leu	Phe	Glu	Pro	Gly	Val	Lys	His	Ala	Leu	Phe	Val	Gly	Ile	Gly	Ile
		515					520					525			
Gln	Ile	Leu	Gln	Gln	Phe	Ala	Gly	Ile	Asn	Gly	Val	Leu	Tyr	Tyr	Thr
		530				535					540				
Pro	Gln	Ile	Leu	Glu	Gln	Ala	Gly	Val	Gly	Val	Leu	Leu	Ala	Asn	Ile
545					550					555	560				
Gly	Leu	Ser	Ser	Ser	Ser	Ala	Ser	Ile	Leu	Ile	Ser	Gly	Leu	Thr	Thr
				565					570	575					
Leu	Leu	Met	Leu	Pro	Ser	Ile	Gly	Ile	Ala	Met	Arg	Leu	Met	Asp	Met
			580					585					590		
Ser	Gly	Arg	Arg	Phe	Leu	Leu	Leu	Ala	Thr	Ile	Pro	Ile	Leu	Ile	Val
		595					600					605			
Ala	Leu	Ala	Ile	Leu	Ile	Leu	Val	Asn	Ile	Leu	Asp	Val	Gly	Thr	Met
		610				615					620				
Val	His	Ala	Ser	Leu	Ser	Thr	Val	Ser	Val	Ile	Leu	Tyr	Phe	Cys	Phe
625					630					635	640				
Phe	Val	Met	Gly	Phe	Gly	Pro	Ile	Pro	Asn	Ile	Leu	Cys	Ala	Glu	Ile
				645					650	655					
Phe	Pro	Thr	Thr	Val	Arg	Gly	Ile	Cys	Ile	Ala	Ile	Cys	Ala	Leu	Thr
			660					665					670		
Phe	Trp	Ile	Gly	Asp	Ile	Ile	Val	Thr	Tyr	Thr	Leu	Pro	Val	Met	Leu
		675					680					685			
Asn	Ala	Ile	Gly	Leu	Ala	Gly	Val	Phe	Gly	Ile	Tyr	Ala	Val	Val	Cys
		690				695					700				
Ile	Leu	Ala	Phe	Leu	Phe	Val	Phe	Met	Lys	Val	Pro	Glu	Thr	Lys	Gly
705					710					715	720				
Met	Pro	Leu	Glu	Val	Ile	Thr	Glu	Phe	Phe	Ser	Val	Gly	Ala	Lys	Gln
				725					730	735					
Ala	Lys	Glu	Asp												
			740												

<210> 38

<212> PRT

<400> 38

Ala Ser Ala Ser Asp Leu Arg Lys Pro Phe Leu His Thr Gly Ser Trp
20 25 30

Gly 50	Ser	Ala	Tyr	Ser	Leu	Arg	Asp	Ser	Ser	Val	Ser	Ala	Val	Leu	
Cys 65	Thr	Leu	Ile	Val	Ala	Leu	Gly	Pro	Ile	Gln	Phe	Gly	Phe	Thr	Cys 80
Gly	Phe	Ser	Ser	Pro 85	Thr	Gln	Asp	Ala	Ile 90	Ile	Ser	Asp	Leu	Gly 95	Leu
Thr	Leu	Ser	Glu 100	Phe	Ser	Leu	Phe	Gly 105	Ser	Leu	Ser	Asn	Val 110	Gly	Ala
Met	Val	Gly 115	Ala	Ile	Ala	Ser	Gly	Gln	Ile	Ala	Glu	Tyr	Ile	Gly	Arg
Lys	Gly 130	Ser	Leu	Met	Ile	Ala 135	Ala	Ile	Pro	Asn	Ile 140	Ile	Gly	Trp	Leu
Ala 145	Ile	Ser	Phe	Ala	Lys 150	Asp	Ser	Ser	Phe	Leu 155	Phe	Met	Gly	Arg	Leu 160
Leu	Glu	Gly	Phe	Gly 165	Val	Gly	Val	Ile	Ser	Tyr	Val	Val	Pro	Val 175	Tyr
Ile	Ala	Glu	Ile 180	Ala	Pro	Gln	Thr	Met 185	Arg	Gly	Ala	Leu	Gly 190	Ser	Val
Asn	Gln	Leu 195	Ser	Val	Thr	Ile	Gly 200	Ile	Leu	Leu	Ala	Tyr 205	Leu	Leu	Gly
Met	Phe 210	Val	Pro	Trp	Arg	Ile 215	Leu	Ser	Val	Leu	Gly 220	Ile	Leu	Pro	Cys
Ser 225	Ile	Leu	Ile	Pro	Gly 230	Leu	Phe	Phe	Ile	Pro 235	Glu	Ser	Pro	Arg	Trp 240
Leu	Ala	Lys	Met	Gly 245	Lys	Met	Glu	Asp	Phe	Glu	Ser	Ser	Leu	Gln 255	Val
Leu	Arg	Gly	Phe 260	Glu	Thr	Asp	Ile	Ala 265	Val	Glu	Val	Asn	Glu 270	Ile	Lys
Arg	Ser	Val 275	Gln	Ser	Ser	Arg	Arg 280	Arg	Thr	Thr	Ile	Arg 285	Phe	Ala	Asp
Ile 290	Lys	Gln	Lys	Arg	Tyr	Ser 295	Val	Pro	Leu	Met	Val 300	Gly	Ile	Gly	Leu
Leu 305	Val	Leu	Gln	Gln 310	Leu	Ser	Gly	Val	Asn	Gly 315	Ile	Leu	Phe	Tyr	Ala 320
Ala	Ser	Ile	Phe 325	Lys	Ala	Ala	Gly	Leu	Thr 330	Asn	Ser	Asn	Leu	Ala 335	Thr
Phe	Gly	Leu	Gly 340	Val	Val	Gln	Val	Val 345	Ala	Thr	Gly	Val	Thr 350	Thr	Trp
Leu	Thr	Asp 355	Lys	Ala	Gly	Arg	Arg 360	Leu	Leu	Leu	Ile	Ile 365	Ser	Thr	Thr

Gly Met Thr Ile Thr Leu Val Val Val Ser Val Ser Phe Phe Val Lys
 370 375 380
 Asp Asn Ile Thr Asn Gly Ser His Leu Tyr Ser Val Met Ser Met Leu
 385 390 395 400
 Ser Leu Val Gly Leu Val Ala Phe Val Ile Ser Phe Ser Leu Gly Leu
 405 410 415
 Gly Ala Ile Pro Trp Ile Ile Met Ser Glu Ile Leu Pro Val Asn Ile
 420 425 430
 Lys Ser Leu Ala Gly Ser Val Ala Thr Leu Ala Asn Trp Leu Thr Ala
 435 440 445
 Trp Leu Ile Thr Met Thr Ala Ser Leu Met Leu Ser Trp Ser Asn Gly
 450 455 460
 Gly Thr Phe Ala Ile Tyr Ala Ala Val Cys Ala Gly Thr Leu Val Phe
 465 470 475 480
 Val Cys Leu Trp Val Pro Glu Thr Lys Gly Arg Thr Leu Glu Glu Ile
 485 490 495
 Ala Phe Ser Phe Arg
 500